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## 1956 Crop Output Hits Record Level On Lower Acreage

New Over-all Highs Set in Yields per Acre, USDA Reports

WASHINGTON—U.S. crop production in 1956 equalled the previous record posted in 1948 and again in 1955, despite the fact that the total harvested acreage was the smallest in 25 years, the U.S. Department of Agriculture reports in its annual crop production summary.

Average yields per harvested acre set new over-all record levels in 1956, with few crops falling below average. The index view of the year's output quickly compares it with other years and with the average of the base years 1947-49 which equals 100. The 1956 index of all crop production reached 106 compared with the revised 1955 index of 106, both equalling the 1948 previous record. The 1956 production index for feed grains was 111, food grains 83, hay and forage 111, oilseed crops 155, cotton 94, tobacco 106, sugar crops 109, fruits 111 and vegetables 106.

The yield per acre index for 1956  
(Continued on page 20)

## Census Reports Output of Grease, Tallow By-products

WASHINGTON—The Bureau of Economic Census reported this month on the 1954 production of grease and tallow by-products for fertilizer use. Output of dry tankage, animal refuse and garbage for fertilizer totaled 46,332 short tons, meat scraps amounted to 219 short tons, bone meal 33,918 short tons and other (dried blood, etc.) 29,479 short tons.

## Institute Executive Committee 'Looks With Disfavor' on Change to Elemental

WASHINGTON — The Executive Committee of the National Plant Food Institute has adopted a resolution which "looks with disfavor" on a proposed change in reporting the phosphate and potash content of fertilizers in the elemental rather than the oxide form.

Action by the committee was taken following a poll of the Institute membership. Institute members were asked whether they favored, opposed or were neutral to the proposal of "changing the expression of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O to P and K, respectively."

The text of the resolution adopted by the committee reads:

"Resolved that the Institute be authorized to publish the results of the membership poll on the oxide vs. elemental issue, and that in view of the results, that the Institute looks with disfavor upon the proposed change."

## New Legislation May Be Needed To Save Soil Bank

By JOHN CIPPERLY  
Croplife Washington Correspondent

WASHINGTON, D.C.—Unless new legislation is forthcoming to amend the soil bank during the next session of Congress which convenes January 3, it may be said without hesitation that the soil bank will be a flop.

This condition has arisen not through any ineptness of the present administration or the USDA, but rather, through the efforts of the National Farmers Union which, with Hubert Humphrey, Democratic senator from Minnesota, joined hands to turn farmers in the Dakotas, Colorado and Nebraska against the soil bank program.

Sen. Humphrey is now proposing that the corn phase of the 1957 crop soil bank be enacted virtually under the same conditions as the 1956 crop, with an acreage allotment of 49 million acres and with a contribution (mandatory) of 15% of the national acreage—to become eligible for the soil bank payments. Sen. Humphrey formerly fought the corn referendum, but now proposes a solution of his own which is little more than the simple referendum alternatives.

It is a most unhappy situation. USDA officials are working for a "bold" choice which may change the picture, but these officials are unwilling to disclose their alternative—and there are few choices left.

At the very outset of this new Congress on Jan. 3, there is little probability that the House Agriculture Committee, which has expressed great eagerness to dig into this situation, can come up with any answer

(Continued on page 21)

## Sept. 30 Carry-Over Stocks Of Most Pesticides Register Increase From Year Earlier

WASHINGTON — The U.S. Department of Agriculture has reported that carry-over stocks of most pesticides as of Sept. 30, 1956, were larger than on the same date a year ago.

Results of a survey conducted by the department indicate that manufacturers, in establishing production schedules in 1956, kept output well above levels needed to meet increased demand and replenish distributive channels.

Pesticide carry-overs in the hands of basic chemical producers increased more than formulators' inventories. For example, producers' stocks of the chlorinated hydrocarbon group (aldrin, chlordane, dieldrin, endrin, heptachlor, and toxaphene) were up over 90%, whereas formulators' stocks increased only 20%.

Producer stocks of DDT, technical and mixed, were 78% larger as contrasted with an increase of 46% for stocks in hands of firms formulating but not manufacturing the product. Producer stocks of undiluted benzene hexachloride grades showed a 100% increase.

The survey showed increased inventories of calcium arsenate, while formulators' stocks of lead arsenate decreased 14% from a year earlier.

The department carries on its pesticide inventory surveys in cooperation with the National Agricultural Chemicals Assn. The report is based on returns received through Dec. 10, 1956, from basic producers and pesticide formulators.

A report to be issued within the next two months will show estimates in terms of pounds. Pesticide stocks of all manufacturers and formulators reporting at end of 1956 as compared with end of 1955-crop year are shown in the table on this page.

## Sulphur Output Sets New Record in '56

NEW YORK—Production and consumption of sulphur in the U.S. reached new highs in 1956 and exports of the yellow mineral held near the record levels of the past few years.

Consumption of sulphur in the United States was estimated at 5,900,000 tons compared with 5,650,000 tons in the previous year, and exports were expected to about equal the 1,600,000 tons shipped in 1955.

Output of sulphur from all sources increased to an estimated 7,875,000 long tons, or 825,000 tons more than in 1955, according to a year end report by Langbourne M. Williams, president of Freeport Sulphur Co.

## 28 Florida Counties Still in Medfly Fight

— See Map on Page 21 —

WASHINGTON — A total of 28 counties in Florida was still involved in the Mediterranean fruit fly eradication program as of Dec. 1, the Plant Pest Control Branch of Agricultural Research Service, U.S. Department of Agriculture has announced.

In eight of these counties, however, spraying has been discontinued and fumigation and certification of citrus are no longer required.

## 1957 Soil Bank Acreage Reserve Regulations Set

WASHINGTON—Regulations covering the acreage reserve program of the soil bank for 1957—the first full year of operation for this new agricultural legislation — were announced Dec. 26 by Ezra Taft Benson, secretary of agriculture.

"The new regulations embody several important changes and additions to those in effect for the emergency acreage reserve program of this year," Mr. Benson said. "As will be recalled, the soil bank law became effective late in May 1956—after most crops had been planted. However, farmers placed slightly over 12

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## H. B. Busdicker Named Head of Pest Control Area

PULLMAN, WASH.—H. B. Busdicker of the U.S. Department of Agriculture, stationed at Washington State College, has been appointed as the Washington-Oregon Area supervisor of the recently designated Western Plant Pest Control region.

The new region combines all functions of the Plant Pest Control Branch of USDA in 11 western states.

State and federal cooperative programs, including quarantine enforcement, barberry eradication for grain stem rust control, grasshopper and Mormon cricket control, khapra beetle, peach mosaic, Hall scale and all insect surveys are among the activities in the region. Mr. Busdicker will supervise the federal plant pest control activities in Washington and Oregon. L. E. Carman and W. H. Chinn have been named as district supervisors to handle the work in the two states.

Regional and area reorganization of plant pest control work will make possible fuller use of manpower and equipment and should result in closer coordination of all state-federal pest control work, Mr. Busdicker said.

The 11-state western region, which coincides geographically with the member states of the Western Plant Protection Board is Washington, Oregon, California, Nevada, Idaho, Montana, Wyoming, Utah, Colorado, Arizona and New Mexico. Regional headquarters will be at San Francisco.

Mr. Busdicker, a government career employee since 1932, has had assignments in North Dakota, Illinois and Montana. Since 1944, he has been stationed in Pullman. In addition to administering the barberry eradication program in Washington and Montana, he has handled related cooperative work in Oregon and Idaho, and since 1953 has also had the responsibility for grasshopper and Mormon cricket control programs in Washington and Oregon.

### DR. E. F. PALMER RETIRES

TORONTO—Dr. E. F. Palmer, director of the Horticultural Experiment Station, for the Ontario Department of Agriculture, will retire from the government service at the end of the year, after 40 years in the position.



**COMPARISON**—Checking the result of a fertilizer experiment are Dr. Lewis Hawkins, left, director of the Oklahoma agricultural experiment station, and Dr. Hugo Graumann, U.S. Department of Agriculture, Beltsville, Md., during the recent crops and soils conference at Oklahoma A&M College, Stillwater. Dr. Graumann, one of the conference speakers, discussed alfalfa research progress. A story of the conference appeared on page 1 of the Dec. 10 issue of Croplife.

## Chemical Brush Spraying Proves Successful

SAN FRANCISCO — Chemical spraying of brush before aerial seeding has proved successful on some Weyerhaeuser Timber Co. tree farms, according to T. H. Ildstad, a Weyerhaeuser logging superintendent who recently addressed the Pacific Logging Congress in San Francisco.

Mr. Ildstad told the group that many areas can be seeded efficiently by helicopter today whereas hand planting of tree seedlings was once the only method of reforesting areas that had burned over or which failed to reforest naturally.

### TVA TO AWARD MEMBERS

CHATTANOOGA, TENN. — Board members of the TVA test-demonstration association have voted to make awards to the group's most outstanding members or to outstanding professional workers who have been connected with the program for the past 21 years. The fourth annual summer meeting and election of officers are scheduled to be held at Lake Junaluska, N.C., in the summer of 1958, the association has announced.

## Cotton Council to Study Improved Production Practices at Meeting

ST. LOUIS—The problem of making cotton more competitive will be studied in detail at the nineteenth annual meeting of the National Cotton Council here, Jan. 28-29.

Two big competitive factors—lower costs and higher quality in raw cotton—will be analyzed in consideration of activities of the council's production and marketing division. Work in this field is concerned with cotton from breeding until it reaches the mill door, and it is one of four major council programs.

Reports will cover progress and point up opportunities for cotton through: (1) breeding of improved varieties; (2) labor savings through mechanization and modern technology; (3) control of insects, weeds and diseases; (4) fertilization, irrigation and other practices to increase yields; (5) harvesting, handling, ginning and packaging of lint so as to preserve its inherent quality; and (6) fiber testing and other modern merchandising practices.

The role of research and education in production and marketing progress and the potential they offer for cotton's future will be pointed up.

More than a thousand leaders of the industry—from the 18 cotton-growing states and representing producers, ginners, merchants, cottonseed crushers, warehousemen and spinners—will attend the council's annual meeting.

## Monsanto to Move District Sales Office

ST. LOUIS—The district sales office for agricultural chemicals of Monsanto Chemical Co.'s Inorganic Chemicals Division, which has been located at Des Moines, Iowa, will be transferred here effective Jan. 1.

G. C. Kempson and W. O. Butler, manager and assistant manager respectively for the office, will be located at 800 N. 12th Blvd. with other Monsanto district sales offices.

The office, which has been in the Insurance Exchange Bldg. at Des Moines since last May, is being moved to bring the organization more in line with existing Monsanto sales territories for other products. The agricultural chemicals group of the division principally handles raw materials used by the fertilizer industry.



William J. Rosenbloom

## William J. Rosenbloom Named Engineering Director of Chemico

NEW YORK — William J. Rosenbloom has been appointed director of engineering for the Chemical Construction Corp., a subsidiary of Electric Bond & Share Co. He developed the electrolytic hydrogen cell and the atmospheric ammonium sulphate process used in many of the plants designed and engineered by Chemico.

Mr. Rosenbloom joined Chemico in 1937, and from 1952 to 1955 served as chief engineer of Chemical Construction (I.A.) Ltd., in Toronto, Canada. He has been engaged in the design and start-up of plants in China, India, Cuba, Philippine Islands, Canada and the U.S. Mr. Rosenbloom is a graduate of McGill University with a degree in chemical engineering.

## Fertilizer Employment Down in South Carolina

COLUMBIA, S.C.—Employment in the fertilizer industry declined 14.3% in November, 1956, from the level of the same month in 1955, the South Carolina Employment Security Commission has reported. This November's figures showed approximately 1,200 persons at work in the industry.

Although the number of jobs declined, hourly earnings rose from a \$1.19 average to \$1.25, but a decline in the average work week from 41.6 to 40.4 hours partially offset this. Weekly wages averaged \$50.50 this November compared with a dollar less last November.

A statewide decline in consumption, and possibly changes in production schedules of plants preparing for spring business were suggested reasons for the decline.

### RYEGRASS COMMISSION

PORTLAND, ORE. — Willamette Valley ryegrass growers voted 136 to 29 at Albany to start circulating petitions for the formation of a common and perennial ryegrass seed commission. The petition establishes the name of the group as the Oregon Ryegrass Growers Seed Commission. Eleven commissioners would be named, including one dealer from Linn County, one grower each from Benton, Lane, Marion and Polk Counties, one grower from one other county and a dealer from a ryegrass growing county.

### POTATO GROWERS TO MEET

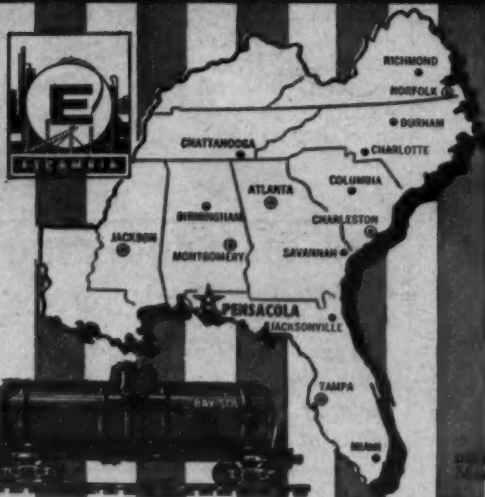
TORONTO—The potato section of the Ontario Soil & Crop Improvement Assn. will hold its meeting in the Coliseum, Exhibition Park, Jan. 3. The day's program will include such subjects as labor, storage, wireworm control, mechanical injury, seed, fertility, new grades, market quotations, yields and quality.

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**To all our friends, Happy New Year!**

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Your cup brimful with cheer.

And may all go right, without  
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# Scientist Declares That Change to NPK Would Be Mark of Maturity for A Full-Grown Fertilizer Industry

By Dr. Vincent Sauchelli\*

## EDITOR'S NOTE

Croplife has carried previous articles and quotations from men in the fertilizer industry who oppose a change in nomenclature from the oxide to the elemental in fertilizer grade designations. Dr. Sauchelli here presents his arguments favoring such a change. Croplife will welcome subsequent comment from people in the trade who may wish to voice further opinions on this subject. (See related story on page 1, this issue.)

The phosphorus and potassium in the fertilizer guarantee are now expressed in terms of the percent by weight of the oxide of these elements: phosphorus as  $P_2O_5$  (called phosphate, phosphoric acid, phosphorus pentoxide) and potassium as  $K_2O$  (referred to as potash or potassium oxide). Why are the elements now expressed as oxides rather than as the elements as such?

Agronomists, agricultural chemists, soil scientists, horticulturists and many others, believing that it is highly desirable in the interest of simplicity, uniformity and accuracy to designate plant nutrients composing chemical fertilizers on the basis of chemical elements in place of oxides of the elements, requested through their organizations that the Association of American Fertilizer Control Officials (AAFCO) adopt officially this change in their Model Fertilizer Bill. The prime and sole consideration of these groups, therefore, was to have officially a uniform labeling for all plant nutrients.

The organizations which have endorsed the change command respect. They are the Soil Science Society of America; the American Society of Agronomy; the 4 National Soil Research Committees; Experiment Station Policy Committee for the West and North Central Regions; Association of Southern Feed and Fertilizer Control Officials, and the Association of American Fertilizer Control Officials.

The men comprising these organizations cannot be labeled "Washington bureaucrats," "long haired impractical dreamers" and "egg-heads" as some would have us believe. I, for one, have high respect and esteem for their abilities, their judgment, and their interest in the welfare of our industry and in that of agriculture.

Let me say at the outset that I am expressing my own views. I am not so presumptuous as to think I could speak for my employers or for the fertilizer industry. I suppose I was asked to present the side favoring the change because of my known views on the subject. What I shall say will be said on the basis of personal conviction and in the spirit of exchanging ideas on a subject which unhappily is becoming quite contentious and in some quarters even acrimonious. As scientists and gentlemen we should be able to exchange ideas on any subject without rancor, bickering, and personalities. I propose to keep it on that basis.

How did the fertilizer industry get started on using the oxides of phosphorus and potassium instead of the elements themselves? I do not know the answer. We can only speculate and then blame the early chemists. Some ask: Why not continue in the traditional manner? After all, the

designations have been used for upwards of 100 years and I say shamefully accepted or condoned by agricultural chemists. Well, why not continue?

Because now we know better and to persist in the same traditional manner is confusing, inaccurate and awkward. Why call  $P_2O_5$ —"phosphoric acid" when we actually have phosphoric acid as such,  $H_3PO_4$ , among current fertilizer materials? Is it any wonder that all the scientific societies, agronomists and control officials favor the change? It is no wonder to me the most recent survey among extension agronomists-horticulturists reveals 3 to 1 in favor.

Any attempt to change a concept or practice that has been in vogue several generations always arouses antagonism among the conservative elements. It is human nature to be more or less conservative—routine is so comfortable. It takes courageous leadership to stir up interest in and put over a necessary change. After it has been accomplished, one usually sees that "our worst troubles never happen." I believe that such will be the case in the present controversy.

Control officials and members of the fertilizer industry with whom I have discussed this appreciate the importance and the necessity of having the change made by regions in order to get uniformity in labeling. The specific reference to this item in the A.A.F.C.O. Model Fertilizer Bill is the following:

"At any time after July 1, 1960, that the ..... finds, after public hearing following due notice, that the requirement for expressing the guaranteed analysis of phosphorus and potassium in elemental form would not impose an economic hardship on distributors and users of fertilizer by reason of conflicting labeling requirements among the states, he may require by regulation thereafter the "guaranteed analysis" shall be in the following form:

Total Nitrogen (N).....per cent  
Available Phosphorus (P).....per cent  
Soluble Potassium (K).....per cent

provided, however, that the effective date of said regulation shall be not less than six months following the issuance thereof, and provided, further, that for a period of two years following the effective date of said regulation, the equivalent of phosphorus and potassium may also be shown in the form of phosphoric acid and potash; provided, however, that after the effective date of a regulation issued under the provisions of this section, requiring that phosphorus and potassium be shown in the elemental form, the guaranteed analysis for nitrogen, phosphorus, and potassium shall constitute the grade."

Those opposed to the change contend that:

a. Many in the fertilizer industry do not know that the change is being seriously considered: One hears the words: "vast majority of them who have heard of the proposal are opposed." How big is vast in these instances? Have they really taken a poll on this? How much more can be done to reach these people? Certainly the trade papers have given it plenty of publicity. I know that it has been discussed on and off in these journals since 1947—almost 10 years.

b. The greatest fear is that there may not be enough support for the change in each state—that chaos would result if some states made the change and others did not, especially contiguous states. Manufacturers who operate across state lines would be seriously hurt.

The proposal to change as described so clearly in the Model Bill should dissipate such fears. The Model Fertilizer Bill provides specifically for this situation by stipulating a target date, 1960, and having the change made up in such manner as to avoid hardships to those whose operations cross contiguous state lines.

An intensive educational program will be needed to effect the change. Surely this can be accomplished within 3 years if every interested group does its part. Some states will have to change the basic fertilizer law; others can do the job by "Regulations" of the Commissioner or Secretary of Agriculture.

c. We do not have enough reaction from farmers and dealers. The few farmers with whom I have discussed this have shown indifference for the most part and when the change-over has been explained and the reasons given for it, they have expressed acquiescence. Perhaps I have not talked to the right farmers! Most of the violent opposition seems to be coming from managements that perhaps have not thought objectively enough on the subject and see in the change a lot of trouble in formulating to the new ratios and more intense competition from certain quarters. Such are honest in their protests and denunciations. I believe, however, they are confusing the issue.

The industry has a big educational job to do to convince modern agriculture that fertilizers are indispensable tools in the economic production of commercial farm crops. Fertilizers are creators of wealth on the farm. "Why," these opponents of the proposed change ask, "should we waste our time and energy on this change when we should be concentrating all effort on the main job of increasing the usage of fertilizers?" I have no quarrel with this attitude. I believe however that it is short sighted. While we are engaged in this broader job of educating farmer, dealer, banker and sales forces why not also get our symbols and nomenclature simplified and accurate? It might convince many of the better educated among these various groups that ours is a grown-up industry based on agricultural science and knows what it is talking about.

Some technical men say, "Why change to the element basis? After all, the plant does not utilize phosphorus as such but by some ionic combination, such as  $H_2PO_4$ . Hence  $P_2O_5$  is as good as P in this respect." Actually, chemistry is not the deciding factor in this case. The farmer is presumably interested in the amount of the constituent given in the guarantee and the simpler the statement of this the better. The nutritive value or "availability" of the constituent is not shown by the manner of expression in the guarantee. The elemental system is simple and is a very accurate expression of the nutrient content. Other allied fields of soil chemistry, fertilizer technology, and plant-animal nutrition use the element nomenclature and uniformity of designation would be very helpful and logical in communicating with these colleagues.

Other contentions of the opposition

if the change is legislated:

(1) We shall have to scrap all experiment station bulletins, technical articles and textbooks which have been written in terms of  $P_2O_5$  and  $K_2O$ . Cast aside many years of agronomic research and millions of dollars of government money used in its development.

True or false?.....False.  
All that is needed is to use 4 simple factors:

$P_2O_5 \times 0.44$  to get P;  $P \times 2.29$  to get  $P_2O_5$   
 $K_2O \times 0.83$  to get K;  $K \times 1.2$  to get  $K_2O$

Anyone surely can do this simple multiplication. At present many agronomists use P in place of  $P_2O_5$  and K, in place of  $K_2O$ . The farmer who buys feed certainly knows about phosphorus and its designation as P and not as  $P_2O_5$ .

(2) To attempt to change fertilizer laws may precipitate severe legislative hassles in many states and the result will be less uniformity than now exists—as many opponents would offer amendments to the bill for the change resulting in a chaotic situation. True or false?.....False.

On this reasoning we should never attempt to progress. The proposal has sufficient merit to appeal to the strong common sense of legislators, farmers and all others involved without the legislative battles.

(3) It is alleged that some control or regulatory officials are now advocating that the guaranteed phosphorus in a fertilizer be limited to water-soluble P only: this would necessarily lower the ratio of phosphorus even more due to reversion and cause the industry to change the method of manufacture of triple and single superphosphates at great expense ultimately to the farmer. True or false?.....False.

I have been present in many committee meetings comprising control and A.O.A.C. officials and members of the industry. This allegation never has been discussed and I know of none in those agencies who has advocated such a change. In fact, in the last revision of the Model Bill the definition of "guaranteed analysis" specifically states "available phosphorus (P) and soluble potassium (K)."

I feel that with proper ground work by control officials cooperating with the industry and the influential agricultural agencies in each state as well as the agricultural committee of the State legislature all working in close cooperation—the proposed change or amendment could be submitted to a state legislature as a non-controversial bill. That it would be passed without any "battles" or "hassles" as feared by some opponents of this change, is my firm belief.

Change is inevitable in this world of ours. To make one realize sharply what has been happening in agriculture alone in the last 30 years consider these typical items which have diminished greatly during the period:

Horses, harness—and machines to fit.

Bulls (to some extent); the ice house; ice-cooled milk tank; house icebox; hand milking; grain binder; corn binder; kerosene; lime spreading with farm equipment; hand grass seeding; loose hay; 2-row cultivator; cleaning seed by hand; gleaning fields on foot; shoveling snow by hand; etc., etc.

Feed grains are now being sold by weight instead of by bushel or peck.

Fertilizer technology—radical changes in manufacturing practices already in effect and more to come. Throughout the world ours is now a chemical industry. We have grown up and should act accordingly.

Alfred North Whitehead, formerly professor at Harvard University, said: "Routine is the god of every social system; it is the 7th heaven of business, the essential component in the success of every factory, the ideal of every statesman... A system will

\*Presented at recent Indiana Fertilizer Conference, Purdue University, Lafayette, Ind.



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the product of intelligence. But when the adequate routine is established, intelligence vanishes and the system is maintained by a coordination of conditioned reflexes.

"Progressiveness is exactly the characteristic that discriminates communities of mankind from communities of insects. This great fact of progressiveness, be it from worse to better, or from better or worse, has become of greater and greater importance in Western civilization as we come to modern times. The rate of change has increased even in my life time.

"Today the recent shortening of the time-span between notable changes in social customs is very obvious if we examine history."

You may like to hear what a distinguished Scottish scientist, Dr. A. I. Smith, thinks about this proposal which by the way, he and others have been sponsoring. "Unfortunately the nomenclature of the manure and fertilizer trade is both antiquated and confusing. . . . Even altho it would seriously upset the cherished sample ratios 1:2:1, 1:1:1 etc. for N:P:O<sub>2</sub>:K<sub>2</sub>O in compound goods it would in the long run be a great advantage to express the nutrients in terms of the elements P and K.

"To students and the uninitiated, the reference to  $P_2O_5$  as 'phosphoric acid,' and to  $K_2O$  as 'potash' when one means in fact phosphorus and potassium respectively is both perplexing and most confusing."

The educational argument is a strong one. To tell agricultural science students that  $P_2O_5$  is "phosphoric acid"—which it really is not—and then point out that actually there is no  $P_2O_5$  as such in phosphatic fertilizers is silly and quite unnecessary. Why refer to potassium oxide in connection with potassium chloride? This advantage alone in explaining clearly and accurately the composition of compound fertilizers would outweigh any damage of temporary kind to the traditional N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O ratio and the nomenclature convention.

A reasonable, accurate explanation by means of a simple nomenclature might possibly convince more students and educated farmers of the intrinsic value of modern, chemical fertilizers.

Freight costs now represent at least 1/3 of the fertilizer cost and the trend in transportation changes is to increase rather than decrease. Therefore, it is very desirable, and more economical, to ship concentrated materials and high analysis complete fertilizers.

By telling a farmer the simple facts of the nutrient content of the fertilizer he is buying should cause him to demand the more concentrated grades: For example, if he were told that a 5-10-15 grade as now designated on the N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O basis is a 5-4.4-12.5 grade on the N-P-K basis, he will see that he is not being oversold on phosphorus or potassium and it might be easier to get him to accept a higher grade on the N-P-K basis.

In a number of states, some agricultural authorities have been maintaining that a high level of residual phosphorus has accumulated in the soil owing to the alleged relatively excessive amount of phosphate contained in the usual fertilizers. When it is realized that the current method of calculating the applied phosphorus as  $P_2O_5$  is about 2 1/4 times more than if calculated on the elemental "P" basis, the alleged very high residual level of soil phosphorus isn't so high as it seems. This same contention goes for potash as  $K_2O$  and as K, except that in this case the  $K_2O$  is only 1.2 times that of K.

Can we keep the current ratios if we change from N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O to the elemental basis? Yes, many of them. But there is nothing sacred in them either. The phosphorus will have to be furnished in most cases by triple super or by one of the ammoniated high analysis phosphates. That in doing so, the manufacturer will be using a material

with less calcium sulfate is of no great importance. Even if we do admit—and I have pointed this out for many years—that the calcium sulfate portion of normal super has value in furnishing some calcium and sulfur, that in itself is not a strong argument for retaining the present system of designation.

If a farmer needs calcium he can buy it cheaply enough as limestone or slag and when he needs lime he usually needs it in ton amounts and not in dribbles. The volume of the fertilizer bag under today's freight charges should be filled with needed and wanted plant nutrients and not with low cost diluents or filler material.

By this same kind of reasoning, they would insist on the use of sulfate of ammonia in place of ammonium nitrate, or urea or ammonia because the sulfate of ammonia, if you please, furnishes some sulfur free of cost in addition to the nitrogen!

In conclusion, I have tried to show that much of the opposition to the

change from the oxide to the elemental basis may reside in misunderstanding: the proposed change of definition in the guaranteed analysis as incorporated in the Model Fertilizer Bill is limited exclusively to converting  $P_2O_5$  to P, and  $K_2O$  to K. Nothing in the proposed change is concerned with the nutritive value or "solubility" of these constituents.

Some persons are wilfully, it seems, muddying the waters: they are confusing the issue by dragging into the discussion the idea of water solubility of the phosphorus and the possible effect such a change would have on formulations, the use of ammoniating solutions and corresponding increases in cost to the farmer of these other formulating procedures.

Whether a plant food carrier is more soluble or less and the effect of such characteristics on plant uptake is an agronomic problem. It seems to me, a discussion of such agronomic phases, while of great importance to the fertilizer indus-

try and the farmer, is outside the province of the proposed simple change in nomenclature. It has been traditional that the agricultural experiment station wrote the prescription and the fertilizer industry filled it, accordingly. If it is found by careful agronomic investigation—that a water-soluble type of plant food carrier is preferable on certain soils than other less soluble types, then I believe the industry will furnish the recommended type. But the investigation should be rigorously checked and confirmed by competent personnel before any change is recommended.

For example, agronomists and soil scientists are not completely agreed that water solubility of a plant nutrient as determined in the chemical laboratory reflects the true behavior of the nutrient after it has been put into a living soil. Microbial and chemical agencies of the soil can quickly alter the water-solubility quality and

(Continued on page 8)



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## Program Announced For Texas Fertilizer Conference Jan. 8-9

COLLEGE STATION, TEXAS — The program for the annual Texas Fertilizer Conference at Texas A&M College here Jan. 8-9 has been announced by Dr. J. F. Fudge, state chemist.

Dr. J. C. Miller, dean of the college's School of Agriculture, will welcome the group to the campus. James D. Dawson Jr., vice president of the Fidelity Chemical Co., Houston, will respond, then will lead industry representatives in a report on the "Fertilizer Outlook for 1957."

Russell Coleman, executive vice president of the National Plant Food Institute, Washington, D.C., will discuss the "Soil Bank Program for 1957—United States." I. H. Lloyd, ASC, College Station, will discuss the "Soil Bank Program for 1957—Texas"

and Tom Wright, vice president of the Lone Star Fertilizer Co., Nacogdoches, will give the "Report of the Galveston Committee on Ratios and Grades."

During the afternoon session, with Dr. J. S. Rogers, head of the agronomy department, presiding, speakers and subjects will be:

C. L. Godfrey, agronomy department, "Irrigation Potentials in the Gulf Coast"; M. E. Bloodworth, agronomy department, "Critical Moisture Stress Periods in Field and Vegetable Crops"; D. E. Longnecker, Ysleta Sub-Station, "Irrigated Cotton Fertilization in the Trans-Pecos Area of Texas"; M. E. Jensen, Amarillo Sub-Station, "Nitrogen Interrelations for Wheat and Grain Sorghum"; A. G. Caldwell, agronomy department, "Pasture Fertility Research in East Texas"; J. R. Hildreth, agricultural economics and sociology department, "Economic Evaluation of Pasture Production in East Texas"; M. K. "Duke" Thornton, agronomy

department, "Soil Test and Fertilizer Recommendations on Pastures," and E. M. Trew, extension pasture specialist, "Your Community Pasture Contest."

Dr. J. B. Page, dean of the graduate school, will serve as master of ceremonies at the banquet during which H. E. Hampton of the agronomy department will discuss East Pakistan's agriculture, and the Rev. R. D. Longshore, pastor of The First Baptist Church in College Station, will discuss Alaskan agriculture.

Three men from the horticulture department will appear on the final session, Jan. 9. They are D. R. Paterson, A. H. Krezdorn and E. E. Burns. Their subjects will be "Irrigated Vegetable Production in East Texas," "Fertilizer for Fruit Production in Texas" and "Vegetable Quality as Influenced by Soil Fertility."

Other speakers during the session will include H. E. Rea, agronomy department, "Chemical Weed Control in Field Crops"; D. M. Martin, en-

tomology department, "Control Insects in Field and Vegetable Crops"; H. E. Smith, plant physiology and pathology department, "Use of Fertilizers in Preventing Plant Diseases," and N. D. Morgan, southwestern representative, American Potato Institute, Shreveport, La., "Plant Tissue Testing and Fertilizer Recommendations."

## New Mexico Growers To Meet in January

STATE COLLEGE, N.M.—The importance of fertilizers and insecticides will be stressed by New Mexico Experiment Station and Extension Service staffs at a two-day short course for fruit and vegetable growers here January 17-18.

S. C. Vandecaveye, New Mexico A&M agronomist, will speak on "Fertilizing." Other topics during the first day will be marketing, inspection, and grading.

Fruit growers will meet in a separate section during the second day and R. C. Dobson, assistant entomologist, will speak to them about "Control of Orchard Insects."

At the same time, Gordon Watts, entomologist, will meet with vegetable growers and discuss "Control of Vegetable Insects." P. J. Leyendecker, head of the agronomy department at New Mexico A&M College, will follow with a talk on "Diseases of Vegetable Crops."

A tour of the A&M Horticulture Farm is also planned, says A. S. Curry, associate Experiment Station director, who is in charge of the short course program.

## Colorado Agricultural Chemicals Group to Meet

DENVER—The annual meeting of the Colorado Agricultural Chemical Assn. will be held Jan. 25 at the Cosmopolitan Hotel in Denver. Sessions will start at 9 a.m., according to W. D. Smith, Denver Fire Clay Co., publicity chairman.

Officers of the association are Howard M. Lair, Selco Supply Co., Eaton Colo., president, Irwin C. Elliott, Chemagro Corp., Littleton, Colo., vice president, and Frank J. Randall, the C. D. Smith Co., Grand Junction, Colo., secretary-treasurer.

## C. G. Stupp Retires

NEW YORK—The retirement of C. G. Stupp, vice president, effective Dec. 31, 1956, has been announced by T. J. Kinsella, president of Barrett Division, Allied Chemical & Dye Corp. Mr. Stupp started with Barrett 4 years ago as a research chemist in the Edgewater plant. Since that time he has held positions of increasing responsibility in sales, manufacturing and research. Mr. Stupp's responsibilities for the direction of the division's technical program will be assumed by Dr. Maurice H. Bigelow, newly appointed technical director.

## WACA to Meet

SAN JOSE, CAL. — The spring meeting of Western Agricultural Chemicals Assn. will be held in the Hotel Biltmore, Los Angeles, April 2. Program details will be announced later, C. O. Barnard, executive secretary, said.

## MONSANTO APPOINTMENT

ST. LOUIS—Dr. Franklin D. Smith of St. Louis has been appointed manager of university development in Monsanto Chemical Co.'s general development department. In the new assignment which he will undertake immediately, Dr. Smith will be responsible for scientific liaison with universities and colleges according to J. J. Healy, director of general development. As part of his duties, Dr. Smith also will be secretary of Monsanto's fellowship and scholarship committee which supervises an extensive aid program to universities in all parts of the country.



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MINNEAPOLIS, MINN.—212 Sixth St. South  
NEW YORK, N. Y.—80 Broadway  
OMAHA, NEB.—6th Floor, WOW Building  
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RALEIGH, N. C.—804 St. Mary's St.  
SALT LAKE CITY, UTAH—68 South Main  
SPOKANE, WASH.—521 E. Sprague  
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WICHITA, KAN.—501 KPH Building



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Fred M. Stewart

### Fred M. Stewart Elected AAI President

MEMPHIS—Fred M. Stewart, vice president and general manager of Agricultural Ammonia Service, Inc., Santa Paula, Calif., will become the seventh president of the Agricultural Ammonia Institute on Jan. 1, 1957. (See page 1 of the Nov. 12 issue of Croplife.)

The 39-year-old Californian will be the first westerner to head the institute. Other presidents were from the South and Midwest. Mr. Stewart will succeed Maj. Gen. Ralph H. Wooten, Mid-South Chemical Corp., Memphis.

Mr. Stewart received a degree in business administration from the University of Southern California in 1940. He was general manager of Allied Plastics Co. in Los Angeles for two years before entering the Navy in 1943. He achieved the rank of lieutenant and commanded a motor torpedo boat in the Pacific.

He organized the Stewart Agricultural Service, a pest control company, in 1946 which still operates in Ventura and Los Angeles counties. He also owns and operates two citrus orchards growing lemons, oranges and grapefruit.

As general manager of Agricultural Ammonia Service, Mr. Stewart directs that firm's ammonia distribution and application activities in three coastal counties and the San Joaquin Valley. He is a member and past director of the California Fumigators Assn., and a member of the California Pest Control Operators Assn.

### U.S. Borax Leases Headquarters Space

NEW YORK—In a move to bring together the offices of its several divisions, United States Borax & Chemical Corp. has leased the 8th and part of the 9th floors of 50 Rockefeller Plaza, New York, N.Y.

The offices will be the headquarters for the Pacific Coast Borax Co. and United States Potash Company divisions, and the eastern sales office of the 20 Mule Team products division. The offices which are being designed and decorated by Maria Bergson, are expected to be ready for occupancy about June 1, 1957.

### ONION BULLETIN

TUCSON—Dr. W. D. Pew, horticulturist with the University of Arizona's Agricultural Experiment Station, is author of a new bulletin, "Onion Growing in Arizona," which covers the life of the pungent bulb crop from seedtime to market. Arizona's "commercial" onion crop—that grown aside from family consumption—ranges around 2,000 to 2,500 irrigated acres annually. The big boost in average yields, as reported by Dr. Pew, was from 160 50-lb. bags per acre in 1944 to 650 50-lb. bags 10 years later—more than a fourfold increase.

### New Synergist for Pyrethrins Announced

NEW YORK—Pilot plant quantities of "Sesoxane," a synergist for pyrethrins and related insecticides, are being manufactured by the fine chemicals division of Shulton, Inc., New York, the company has announced. The makers state that the new synergist, discovered earlier by Dr. Morton Beroza, USDA researcher at Beltsville, Md., has shown good activity with pyrethrins in the control of insects on grains, fruits, livestock, and for household use.

A comprehensive report describing the effectiveness of Sesoxane was presented at the Dec. 5th meeting of the Chemical Specialties Manufacturers Assn. in Washington, D.C., by J. H. Fales of the USDA entomology research branch, Beltsville, Md.

The makers state that because of the product's solubility in kerosene, Freon 11, Freon 12 and other solvents, it is easy to formulate in conventional equipment. Richard E. Brainard, vice president of Shulton and general manager of the fine chemicals division, who made the announcement concerning the new material, said the Sesoxane-pyrethrin formulations should be of interest to formulators and packagers of insecticides where safety is an important factor in their use.

According to technical data issued by the makers, Sesoxane's toxicity is low, having an acute oral LD-50 to rats of 2,000 milligrams per kilogram. It is a liquid, of straw to light amber in color, and possesses a "pleasant, mild" odor. Its purity is greater than 95%, according to the makers.

The company says that although Sesoxane is currently being manufactured in pilot plant quantities, large scale production of the synergist will follow shortly. Samples for experimental purposes only to research groups and insecticide manufacturers are available.

### AP&CC Promotion

LOS ANGELES—American Potash & Chemical Corp. has announced the promotion of Henry DeArmond from assistant treasurer of the company to administrative assistant. Mr. DeArmond will report to both Richard J. Hefler, AP&CC secretary and assistant to the president, and Forrest E. Branch, director, administrative services.

### American Potash Announces Changes At Trona Plant

LOS ANGELES—Calvin L. Dickinson, director of manufacturing at American Potash & Chemical Corp.'s main plant at Trona, Cal., recently announced organizational changes affecting top supervisory personnel at the Trona plant's engineering department.

Included in the shift are Myron W. Colony, formerly chief engineer; James Jensen, formerly assistant chief engineer; Howard Barker, formerly plant engineering head; W. C. Henderson, formerly general foreman of maintenance and construction, and A. L. Cartter, foreman of maintenance and construction.

Under the change, Mr. Colony has assumed responsibilities of advisory engineer to aid in long-range engineering planning and coordinate basic planning on major projects.

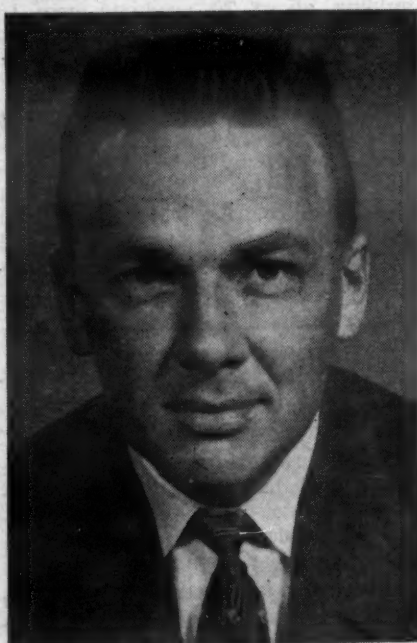
Mr. Jensen has been appointed manager, plant engineering, while Mr. Barker becomes assistant manager, plant engineering. Mr. Henderson was named plant engineer, while Mr. Cartter succeeds Mr. Henderson as general foreman.

### Bernard R. Ellison Joins Cooperative

SALT LAKE CITY—Bernard R. Ellison, weed and seed supervisor for the Utah Department of Agriculture for the past four years, is the new research director for the Kelly-Western Seed Division, Utah Cooperative Assn. The division cleans and markets seeds grown by Utah agriculturists. It also makes and sells a commercial weed killer. Mr. Ellison is a graduate of the University of Utah and received his master's degree from Michigan State University. He has completed most of the requirements toward a doctorate at Michigan State.

### TO MARK CHEMICAL PROGRESS

WASHINGTON, D.C.—Chemical Progress Week will be observed April 8-12, 1957, according to an announcement by the Manufacturing Chemists' Assn., Inc., Washington. The objective of the observance is to remind the American public of the significance of the chemical industry in terms of daily life, MCA says. National chairman of the event is Gen. John E. Hull, USA (Ret.), and Cleveland Lane, MCA, is National vice chairman.



William P. Brashear

NATIONAL POTASH CO. REPRESENTATIVES—National Potash Co., New York, has announced the appointment of one new sales representative and the transfer of another, both in southern territories. William P. Brashear, a graduate of Texas A&M College has been made sales representative in the states of Texas, Louisiana, Oklahoma and Arkansas, with headquarters in Shreveport, La.

William C. Boswell has been transferred from the southwestern territory to the company's Montgomery, Ala. office, from which headquarters he will work the states of Georgia and Mississippi under the supervision of Fred C. Broadway. Mr. Boswell is a graduate of the University of Alabama.



William C. Boswell



Lawrence C. Byck, Jr.

### Lawrence C. Byck, Jr., Named Head of Heavy Chemical Sales by USI

NEW YORK—Lawrence C. Byck, Jr., has been named manager of heavy chemical sales for U.S. Industrial Chemicals Co., Division of National Distillers Products Corp., it has been announced by A. R. Ludlow, Jr., U.S.I.'s director of sales. Mr. Byck will have responsibility for sales of heavy chemicals, including nitrogen products, phosphoric acid and sulfuric acid.

Mr. Byck, a graduate of Yale University, has been assistant to the manager of chemical sales during the past four years, and has been with the U.S.I. organization since 1945 in research and technical liaison positions as well.

Before he joined U.S.I., he was employed by Carbide and Carbon Chemicals Co. in South Charleston, W.Va., and the Permutit Co. in New York City.

In his new position, Mr. Byck will be responsible for sales of ammonia, nitric acid, and nitrogen solutions from the U.S.I. synthetic ammonia plant at Tuscola, Ill. He will also be responsible for sulfuric acid sales from U.S.I.'s three plants at Tuscola, Ill., Dubuque, Iowa, and Sunflower, Kansas. Mr. Byck will also have responsibility for sales of phosphoric acid when U.S.I.'s new wet-process phosphoric acid plant is completed. This plant, located in Tuscola, Ill., is expected to be on-stream by January, 1957.

### Dow Plans Additional Research Facilities

MIDLAND, MICH.—The Dow Chemical Co. has presented a request to the Contra Costa County Planning Commission to rezone 30 acres of land in California's Ygnacio Valley, it has been announced by Dr. Leland I. Doan, president of Dow. Dow's intention is to purchase this land in order to provide a location for the future expansion of company research facilities.

Present preliminary architectural plans call for one-story research laboratories. The facilities will ultimately provide space for several hundred research scientists and technicians. The laboratories will be designed in keeping with the atmosphere of the surrounding community.

The land involved lies on the west side of Oak Grove Boulevard immediately south of the Contra Costa canal.

### CALIFORNIA STORE MOVES

MODESTO, CAL.—The South Modesto Feed Store has moved recently to Crater Ave. in Modesto, Cal., in order to provide better service to customers, according to Lannie Duncan, owner and manager of the store.



## Program Announced for Tenth Annual Southern Weed Conference Jan. 23-25

MEMPHIS—The program for the tenth annual Southern Weed Conference, Jan. 23-25, Bon Air Hotel, Augusta, Ga., was announced recently by W. B. Albert, president of the conference.

Leading authorities from southern land-grant colleges, U.S. Department of Agriculture, agricultural chemical manufacturers, farm equipment manufacturers and farmers from over the southern states are expected to attend.

Conference officers for this year are W. B. Albert, South Carolina Agricultural Experiment Station, Clemson, S.C., president; E. G. Rodgers, University of Florida, Gainesville, Fla., vice president, and W. K. Porter, Louisiana Agricultural Experiment Station, Baton Rouge, La., secretary-treasurer. Dr. J. K. Leasure, Dow Chemical Co., Midland, Mich., is chairman of the program committee.

The full program is as follows:

Wednesday morning, Jan. 23—Registration; general session, W. B. Albert, presiding; "Welcome to Augusta," Hugh L. Hamilton, mayor of Augusta; "Weed Control on Highways," Wilbur J. Garmhausen, Ohio Department of Highways; "Control of Weeds in Ponds," H. S. Swingle, Alabama Polytechnic Institute; "Problems in Brush Control," R. H. Beatty, American Chemical Paint Co.; "Railroad Weed Control Problems," John P. Quarles, National Aluminate Corp.

Wednesday afternoon—D. E. Davis, presiding; "The Problem of Nutgrass," E. W. Hauser, USDA, ARS, Experiment, Ga.; "The Problem of Johnsongrass," E. R. Stamper, Louisiana State University; "Perennial Vines in Fields," H. E. Rea, Texas Experiment Station; "Striga: A Potential Threat to Corn and Other Summer Grass Crops," O. E. Rud, W. G. Westmoreland and G. C. Klingman, North Carolina State College; "Responses of Johnsongrass to Pre-planting Treatments with Discing and Herbicides," E. W. Hauser and J. T. Thompson, Georgia Experiment Station.

Wednesday evening—Executive committee meeting.

Thursday morning, Jan. 24—Dr. W. B. Albert, presiding; Report of the research committee; Business meeting.

Thursday afternoon—V. S. Searcy, presiding; Section I; "Dichlone as a Control for Algae and Submerged Aquatic Weeds," H. Douglas Tate, Naugatuck Chemical Co.; "Extension Publications in a Weed Control Program," W. G. Westmoreland; "Mylone, a New Temporary Soil Sterilant," R. J. Zedler and J. W. Keays, Carbide & Carbon Chemical Co.; "Herbicides Pay Off," a film presentation, Jack Dreessen, National Agricultural Chemicals Assn.; "Pre- and Post-emergence Weed Control in

Cabbage," V. L. Guzman, Florida Experiment Station; "The Use of Granular Herbicides in Azaleas," W. E. Chappell, Virginia Experiment Station; "Corn: Comparisons of Three Nitrogen Sources for Weed Control and Top Dressing," G. C. Klingman; "Pre- and Post-emergence Herbicides on Sweet Corn," D. S. Burgis, Florida Experiment Station; "The Use of CIPC on Mixed Plantings of Alfalfa and Orchardgrass," G. M. Shear, Virginia Experiment Station.

Thursday afternoon—W. K. Porter, presiding; Section II; "The Control of Mesquite, Marabu, and Leiteiro on Grazing Lands," C. E. Fisher, Texas Experiment Station; "Comparison of Granular Forms of Urea Herbicides in Aerial and Hand Broadcast Applications for Controlling Post and Blackjack Oak," R. A. Darrow and W. G. McCully, Texas Experiment Station; "Some Factors Concerning the Use of Granular Herbicides for Brush Control," W. G. McCully; "Trichlorobenzoic Acid in the Control of Woody Species in Texas," R. A. Darrow; "Aerial Spraying with Silvex and 2,4,5-T for Control of Post and Blackjack Oak," R. A. Darrow; "The Chemical Control of Texas Buckeye (*Aesculus arguta*)," O. E. Sperry, Texas Experiment Station.

Thursday evening—Banquet—presidential address by Dr. W. B. Albert.

Friday morning, Jan. 25—W. G. Westmoreland, presiding; Section I; "Current Evaluation of Chemicals for Weed Control in Corn," G. M. Shear; "Weed Control in Field Grown Tobacco," G. C. Klingman; "Weed Control in Tobacco Seedbeds in 1955 and 1956," W. E. Chappell and J. L. LaPrade, Virginia Experiment Station; "Grass Control in Sugar Cane," V. L. Guzman; "The Control of Johnsongrass in Row Crops," H. E. Rea, Texas Experiment Station; "Response of Peanuts and Annual Weeds to Early Post-emergence Applications of the Amine Salt of DNB," A. J. Watson, Dow Chemical Co.; "Comparison of Granular and Spray Application of Herbicides on Peanuts," W. E. Chappell, Virginia Experiment Station.

Friday morning—R. F. Richards, presiding; Section II; "Progress Report on CIPC and Diuron for Pre-emergence Weed Control in Cotton," C. G. McWhorter and J. T. Holstun, Jr., USDA, ARS, Stoneville, Miss.; "A Preliminary Study of the Effects of Weeds on Cotton," J. T. Holstun, Jr.; "A Critical Evaluation of the Use of Pre-emergence Herbicides for Weed Control in Cotton," W. K. Porter, Jr., Louisiana State University; "Responses of Cotton Varieties to Pre-emergence Herbicides," B. A. Waddle, C. Hughes, M. N. Christensen and R. E. Frans, University of Arkansas; "Chemical and Cultural Studies on the Control of Nutgrass

in Cotton," J. A. Wilkerson, J. H. Miller, H. S. Stanton and C. L. Foy, University of California; "Substituted Ureas for Weed Control in Crops," D. C. Drake, E. I. Dupont de Nemours & Co.; "The Effect of Chemical Combinations as Herbicides on Johnsongrass Control in Louisiana Sugar Cane," E. R. Stamper.

Friday afternoon—G. C. Klingman, presiding; "Causes of Variability in Susceptibility to Injury by DNB," D. E. Davis and H. H. Funderburk, Alabama Polytechnic Institute; "The Effect of Temperature, Rate of Application, Soil Moisture and Organic Matter Content on the Leaching of Diuron from Lakeland Sand Soil," R. P. Upchurch and W. C. Pierce, Air Force Armament Center, Elgin Air Force Base, Fla.; "The Physiological Basis of Selectivity," D. E. Moreland, USDA, ARS, Raleigh, N.C.; "The Influence of Soil Moisture and Depth of Planting on the Response of Peanuts to 2,4-DES," J. T. Thompson, E. W. Hauser and R. O. Hammons, Georgia Experiment Station; "Some Anatomical Effects of Sodium 2,2-Dichloropropionate on Plants," A. M. Davis, University of Arkansas; "Kinetics of Growth Inhibition by Herbicides," R. E. Frans, University of Arkansas; "Herbicidal Activity of the Optical Isomers of Silvex," Richard Behrens, USDA, ARS, College Station, Texas.

### Arthur M. Griswold Named to Research Position With Dow

MIDLAND, MICH.—Appointment of Arthur M. Griswold as manager of foreign research operations on the executive research staff of the Dow Chemical Co. has been announced by Dr. R. H. Boundy, vice president and director of research.

Mr. Griswold has been section superintendent of Dowicide products for a number of years. In his new post he will be closely associated with Dr. W. Hirschkind, technical adviser to the Dow president, and E. C. Burdick, executive research consultant and former patent department director. The three will function as a team handling foreign contracts on research and technical problems.

Mr. Griswold joined Dow in 1928 after receiving his B.S. degree in 1926 and M.S. in 1927 from Northwestern University. Early in his career he was associated with the production of phenetidine and phenacetin. Over the years he has been instrumental in guiding about 70 products new to the company through the development stage and into commercial production.

His major work with Dow has been the development of the Dowicides, products used by industry and agriculture for the control of bacteria and fungi. In this field he has been active in research, production and marketing including customer contacts and promotion.

### DR. SAUCHELLI

(Continued from page 5)

mock the laboratory determination. However, I insist this is another problem and it does not belong in the current discussion on the merits or not of the proposed change of symbols.

Finally, I am reminded of some famous lines of James Russell Lowell's written, of course, on an occasion of vastly greater national importance than the present one in which we find ourselves. You remember the hymn beginning with, "Once to every man and nation comes the moment to decide." The verse which somehow fits into our situation is this:

"New occasions teach new duties,  
Time makes ancient good uncouth;  
They must upward still and onward  
Who would keep abreast of Truth."

## ACREAGE RESERVE

(Continued from page 1)

million acres of basic crops—wheat, corn, cotton, rice, peanuts, and tobacco—in the 1956 acreage reserve. In spite of this relatively good start, we do not consider that this year's program was a fair trial of the surplus-reducing possibilities of the soil bank. We anticipate a much more successful program in 1957.

"Most of the changes that have been made are to insure producers a fair and equitable opportunity to participate in the 1957 program. County agricultural stabilization and conservation committees will begin accepting 1957 acreage reserve agreements for corn, cotton, rice, tobacco and spring wheat as early as possible in January. Farmers already have pledged over 10.5 million acres of winter wheat in the 1957 program for that crop."

Among the more important provisions of the new regulations are the following:

1. A national allocation of 1957 acreage reserve funds among the commodities to be covered in the 1957 program—wheat, corn, upland cotton, tobacco and rice.
2. A breakdown of these commodity allocations among producing states and counties within them.
3. Establishment of maximums on the amount of acreage of a particular crop that an individual farmer can place in the acreage reserve, with a provision that this maximum may be exceeded if funds are still available after all farmers have had an opportunity to participate.
4. There will be no minimum acreage limitations on the amount of land that may be entered in the program, except those already in effect for 1957 wheat.

National allocations of 1957 acreage reserve funds by commodities are: Cotton, \$217,500,000; corn, \$217,500,000; rice, \$14,000,000; tobacco, \$34,055,000; and wheat, both winter and spring, \$267,630,000—a total of \$750,685,000.

This is \$685,000 above the \$750,000,000 set by the soil bank law for any year's operation of the acreage reserve program. Department officials explained that this excess is to take care of "slippage"—money that may be committed, but which will not be used because not all agreements will be carried out or qualified for the full commitment.

Limits on extent of participation in the 1957 program provide that the acreage for any commodity placed in the acreage reserve by a farm shall not exceed that farm's allotment for the commodity.

Within this limitation, the maximum acreages that may be originally entered for a farm are: Wheat, 50 acres or 50% of the farm allotment, whichever is larger; corn and rice, 20 acres or 30% of the allotment, whichever is larger; cotton, 10 acres or 30% of the allotment, whichever is larger; and burley, dark air-cured, fire-cured and Virginia sun-cured tobacco, 1 acre or 30% of the allotment, whichever is larger; and for all other tobacco, 3 acres or 30% of the allotment, whichever is larger.

Deadline for signing 1957 acreage reserve agreements will be March 1 for cotton and tobacco and March 8 for corn, spring wheat and rice.

Only land suitable for the production of the commodity covered by an agreement will be eligible for designation as the acreage reserve. County ASC committees may also reject designations of tracts which are of such size, shape, or nature as to make it impracticable to determine performance of an agreement or will tend to defeat the purpose of the soil bank program.

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## Special Retail Section

# Better Selling

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Fields for  
Dealers**

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

## Tennessee Firm Cashes in on New Farming Developments in Trade Area

By AL P. NELSON  
Croplife Special Writer

By keeping in close touch with the needs of farmers and changing agricultural trends, the Robert Hayes & Sons firm, Lawrenceburg, Tenn., is able to satisfy many of its customers and get them to return time and again for merchandise and advice.

James and Ogle Hayes, brothers, who now run the business, report that since hybrid corn has made such big strides in the South in raising corn production, the firm features it in its seed displays and advertising. The brothers also stress seasonally the large yields which can be obtained by using such seed corn, plus the proper amounts of good fertilizer. Introduction of hybrid seed corn in this area has helped farmers raise per acre yields of corn from about 20 to 60 bu., more in some instances.

While farmers in this area are traditionally wedded economically to cotton and tobacco, two fine cash crops, the restricted acreage on these crops annually has forced some farmers to think about diversification to round out the farm program. This is one reason why corn is being featured in many areas, along with feeding of beef cattle and the raising of dairy cows to some extent. The Hayes brothers keep studying about these new developments so that they can advise farmers on methods whereby extra income can be made profitably on some of these new agricultural practices.

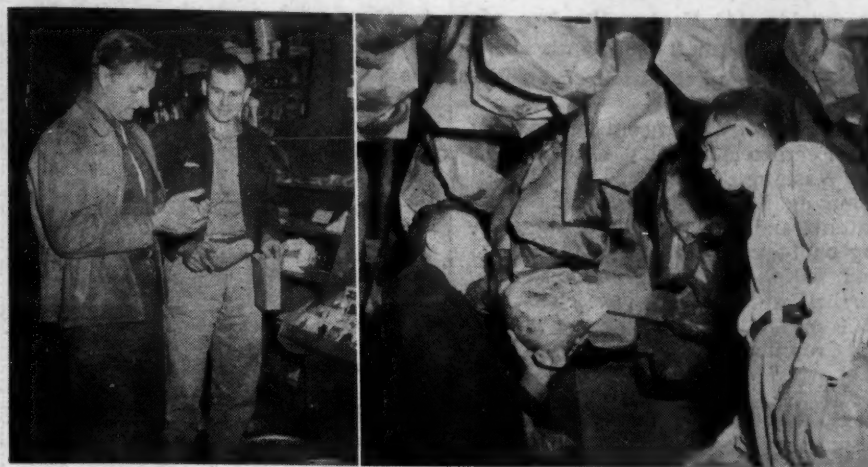
"These are changing times," states Ogle Hayes, "and while many of our farmers still make good profit on the cotton and tobacco acreage which they have, they are also becoming alert to other crop opportunities. As farm supply dealers we make it a point to furnish customers with whatever information we have on crops, seeds and fertilizer which can help them in seeking new crops for additional revenue."

On cotton land, farmers in this area are using a great deal of 6-12-12 while corn calls for 6-8-4 and 6-12-12. On tobacco, farmers are using 4-8-12. The Hayes firm sells about 1,500 tons of fertilizer annually. It sold more in other years, but heavy seasonal discounting in the area caused the brothers to cut down on sales promotional work and to put emphasis on sales promotion for other lines this past year.

Many tobacco farmers in the area have soil fumigation beds for tobacco, reports Ogle Hayes. This practice has increased year after year. The store sells many soil fumigants for this purpose, and occasionally has store demonstration beds to show to prospects.

"Our county agents and other governmental workers are doing a splendid job on soil fumigation education, as well as on fertilizer and pesticides," states Mr. Hayes. "This work is a big aid to the farm supply dealer, because many customers already know what products they need to protect certain crops, and they come in and ask for them by name. We attend all of these meetings we can,

(Continued on page 13)



**TENNESSEE DEALERS**—Shown in the left photo above is Ogle Hayes, right, Robert Hayes & Sons, Lawrenceburg, Tenn., making a sale to a customer. In the photo at the right, James Hayes, left, is showing one of the firm's cured hams to a prospective buyer.



### SHOP TALK

### OVER THE COUNTER

### FOR THE DEALER

By EMMET J. HOFFMAN  
Croplife Merchandising Editor

Why did the customer walk out without buying? If the farm supply dealer could know the answer to that question in each case, his sales would be materially higher.

The dealer of course cannot control every situation in which the prospect walks out of the store without buying. Such cases may arise if the prospect asks for a product which the dealer is not expected to handle. Occasionally a heavy seasonal demand may cause a merchant to be temporarily out of certain merchandise, thereby causing the loss of a sale.

However, the dealer has control over most factors which cause

customers to walk out without buying.

A survey of customers shopping for a wide variety of items, revealed some interesting reasons why they left a store without buying. Eliminating some of these reasons will enable dealers to make many extra sales during the year. Here are some of the reasons given by the customers for not buying and walking out:

The store was out of stock of the desired merchandise because of failure to re-order far enough ahead.

The customer wanted a specific size, style or pattern that the store did not have in stock.

The item carried had been replaced by one that would do a better job and which the store did not carry.

Prices were above those offered by competitors or the store did not have "price merchandise" in stock to meet competitive prices.

The brand or line carried lacked new features offered by those of competitors.

No effort was made to convince the customer that the line carried was as good or better than the one requested which was not stocked.

The store did not concentrate sufficiently on handling the customer's needs but tried to rush him through the sale.

The salesman merely answered the customer's questions and did not at-

(Continued on page 15)

### Texas Farmer Produces 6 Bale Cotton Yield

**DELL CITY, TEXAS**—A cotton field of less than three acres on a New Mexico homestead seven miles north of here may have been the site of world's cotton production record in 1956.

The owner, Lendol Barker, picked 7,300 lb. of lint cotton from a government-measured field of 2.4 acres. At the usual 500 lb. of lint to the bale, this figures about six bales per acre.

The cotton was planted in strips as is the custom in much of West Texas and New Mexico. Mr. Barker irrigated it from a large 10-inch well.

He applied 200 lb. of 16-20-0 and 100 lb. of anhydrous ammonia. Insects were kept down by a strict control program, and hoeing and cultivation kept the crop clean and in good tilth.

Mr. Barker attributes part of the success to the fact that the land had been in cultivation only one year, and the rest of it to fertilizer and hard work.

**APPLE GROWERS TO MEET**  
**HENDERSONVILLE, N.C.**—The North Carolina Apple Growers Assn. will hold its annual meeting here Jan. 8-9.



By RAYMOND ROSSON  
County Agent, Washington County, Tenn.

Are we happy? The happiest people are those who think the most interesting thoughts . . . interesting thoughts can live only in cultivated minds. People who love good music, good books, good pictures, good plays, good sermons, good conversation . . . they are the happiest people in the world . . . they are not only happy in themselves; they are the cause of happiness in others.

Everyone loves to meet the "face of happiness." This face is found in the garden, field, school, church, office or workshop. It is found where people live in natural conditions and who have a "hold" on "simplicity," where love abounds and correct attitudes register one hundred percent.

We are happy on our birthdays, but happier on Christmas, for Christmas is everybody's birthday; with the party going on over most of the world. Christmas is to every child, the wonder of the world and the light of life.

*Christmas is being together . . . it is time for the heart's inventory. It is the child's day, and if at no other time, all men are children. Our homes should be built on a Christian foundation. Independence and liberty sprang from the forces set going by the man of Galilee, and kept in motion by faith, hope and human understanding.*

America and the world need Christ in 1956-57; the same as did the people of Bethlehem in year one.

### North Carolina Pesticide School Set for Jan. 10-11

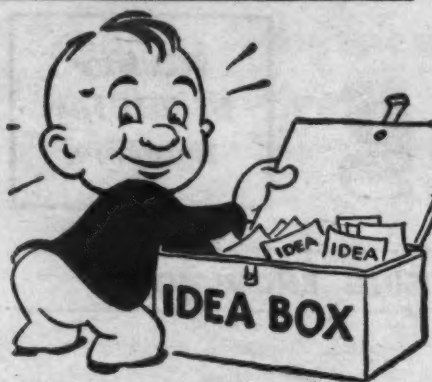
**RALEIGH, N.C.**—An extensive program of reports on new developments in herbicides, fungicides, insecticides and rodenticides has been scheduled for the ninth annual North Carolina Pesticide School, to be held at North Carolina State College here Jan. 10-11.

More than 20 specialists from the college will appear on the program to sum up recent college research on pesticides. Other speakers will include George M. McNew, Boyce Thompson Institute of Plant Research, Inc., and James D. DeWitt, Fish and Wildlife Service, U.S. Department of the Interior.

### LIME BOOSTS YIELD

**BONIFAY, FLA.**—Liming peanuts more than doubled production for Willard Powell, Westville, Fla., farmer, according to C. U. Story, associate Holmes County agent. Applying 3,000 lb. of lime to raise the soil pH above 5.6 according to soil test recommendations, Mr. Powell averaged 1,807 lb. of peanuts per acre, as compared with 714 lb. of peanuts on unlimed fields, the agent said.





## What's New...

### In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

#### No. 6518—Adsorbents

The Floridin Co. has produced a booklet describing its products for agricultural chemical processing. The products are trade-named Diluex, Diluex "A," Florex and Florigel. The products' action in agricultural and household pesticide formulations is outlined. The use of several products as adsorbent carriers in the formulation of granular pesticides is described as is the formulation processes in frequent use. Check No. 6518 on the coupon and mail it to secure the booklet.

#### No. 6520—Granulator

A new type of granulator, the Sackett Star Granulator, has been introduced to the fertilizer industry, according to officials of the A. J. Sackett & Sons Co. Featuring what is called a new concept in granulation equipment design, the granulator is equipped with five curved baffles on the interior of the machine. Action by these baffles violently rolls and tumbles the material through the machine, substantially increasing product recovery, efficiency and reducing the costs of production, according to Sackett. Several of the granulators already are in action in the industry and were the subject of a discussion by Albert Spillman, Fertilizer Manufacturing Coopera-

tive, Inc., at the recent meeting of the Fertilizer Industry Round Table in Washington, D.C. The Sackett company indicates U.S. and foreign patents are pending. The accompanying photograph illustrates the design and action of the granulator. For further information please check No. 6520 on the coupon, clip and mail it to Croplife.

#### No. 6519—Combination Spreader

The Highway Equipment Co., Inc., announces its "New Leader" engine driven combination spreader. The announcement states: "It affords a new



convenience to the driver by the very accessible engine location, also a larger engine with more horse-

power for spreading maximum tonnage of lime and other agricultural products. A new direct drive from the engine direct to the distributor discs eliminates the use of chains, sprockets, idlers and some bearings." For further information check No. 6519 on the coupon and mail it to Croplife.

### Also Available

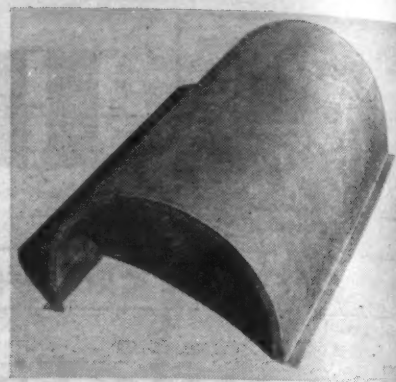
The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

#### No. 6515—Dispersant

Orzan P, a new member of a group of surface-active, lignin sulfonate chemicals for industry, is now being marketed by the Crown Zellerbach Corp. The product has the property of precipitating readily from solutions and clinging to fibers or other materials present, company officials say. A spray-dried powder, the product may be precipitated from even dilute solutions by the addition of alum. Recommended uses are: as a binder for fibers, retention of fines, an emulsifier, an emulsion stabilizer, a flocculant and a dispersant. Applications in the insecticide field have been made successfully, according to company officials. They add: "It is possible that the farmer, as well as the chemist, will find Orzan useful. A large amount of work has been done by agricultural researchers at Oregon State College, Washington State College and the University of California, as well as private industries, to investigate Orzan's effect on soils and plants. A number of potential applications have resulted. It is known that the product may be used to improve soil structure, improve water penetration, add organic matter to the soil, supply additional nutrients, improve growth of certain crops and minimize wind erosion." Secure more complete information by checking No. 6515 on the coupon and mailing to Croplife.

#### No. 6513—Conveyor Cover

The K. E. Savage Co. has designed and is providing a fiber glass conveyor cover, made in 5-ft. lengths. Company officials say that the cover is being used in fertilizer plant installations because the material is impervious to chemicals and can readily be adapted for use with any corrosive product. The cover is made in a half-circle having an 18-in. radius. There is 4 in. of straight section on each side and a 2-in. heavy flange extending outward and running the 5-ft. length of the cover. An internal flange is provided at each end of the cover to give additional stiffness. The cover was designed to use with 18-, 20- and 24-in. belts, but it can be made to accommodate



wider belts. Company officials state that the units are ideal to cover conveyors running from one building to another to keep out rain. Secure more complete details by checking No. 6513 on the coupon and mailing it to Croplife.

#### No. 6516—Garden Duster

A permanent, re-usable plastic garden duster is being marketed by the Kalo Co. Company officials say that the duster has no inner tube to clog and can be used conveniently with one hand. They continue: "Garden Duster is filled with Plantgard 1% Rotenone-copper garden and rose dust to fight many chewing and sucking insects and fungus diseases in the garden." A caption on the duster reads: "Leaves no dangerous residue when used as directed." To secure more complete information and details of price in quantity lots, check No. 6516 on the coupon and mail it.

#### No. 6517—Deer Repellent

A deer repellent is now being manufactured by State College Laboratories, a subsidiary of the J. C. Ehrlich Co., under the trade name of College Brand Magic Circle. The new product is claimed to be a foolproof, easy-to-use chemical that is mixed in proportions of one part to 100 parts of water and applied as a spray. It can be used by itself or mixed with almost any ordinary insecticide and fungicide. According to the company, property owners can spray a ring around their shrubs, grain fields, gardens or orchards, and deer—and in most cases—beavers, woodchucks, raccoons and skunks will keep away. One spray is claimed to last for 30 days. One- and 5-gallon containers are being marketed. Check No. 6517 on the coupon and mail it to secure more complete details.

#### No. 4064—Wire Screens

The Cleveland Wire Cloth & Manufacturing Co. has prepared a new two-color illustrated folder which combines a brief history of the company with partial cataloging of the most popular wire screen items. The folder is entitled, "Quality Wire Screen," and may be obtained by checking No. 4064 on the coupon and mailing it to this publication.

#### No. 6512—Paper Brochure

The Olin Mathieson Chemical Corp., forest products division, has prepared a brochure explaining how Kraft paper is made. The division produces multiwall bags and other paper bags and container products. The brochure provides company information and lists principal products, including its agricultural chemicals. Secure the brochure by checking No. 6512 on the coupon and mailing it to Croplife.

#### No. 6508—Plant Food

The H. D. Campbell Co. is now offering a ready-to-use liquid plant food in a household-size plastic squeeze container. The product, called by the trade name of Gro-Green, is packaged in a 4-oz. size that is suited

Send me information on the items marked:

- |  |  |
|--|--|
| <input type="checkbox"/> No. 4064—Wire Screens   | <input type="checkbox"/> No. 6515—Dispersant     |
| <input type="checkbox"/> No. 5595—Scale          | <input type="checkbox"/> No. 6516—Garden Duster  |
| <input type="checkbox"/> No. 6507—Car Apron      | <input type="checkbox"/> No. 6517—Deer Repellent |
| <input type="checkbox"/> No. 6508—Plant Food     | <input type="checkbox"/> No. 6518—Adsorbents     |
| <input type="checkbox"/> No. 6512—Paper Brochure | <input type="checkbox"/> No. 6519—Spreader       |
| <input type="checkbox"/> No. 6513—Conveyor Cover | <input type="checkbox"/> No. 6520—Granulator     |
| <input type="checkbox"/> No. 6514—Film Catalog   |  |

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for the feeding of potted plants, flowers and for similar household uses. The liquid is sprayed in small amounts directly on the leaves of the plant after watering. Company officials state that "Foliage Dietene," an ingredient found in the product, makes possible successful leaf feeding by breaking down the surface tension of leaves and enabling plant nutrients to be quickly and completely absorbed by the leaf surface. To secure more complete information about the product and quantity price quotations check No. 6508 on the coupon and mail it to Croplife.

### No. 6514—Film Catalog

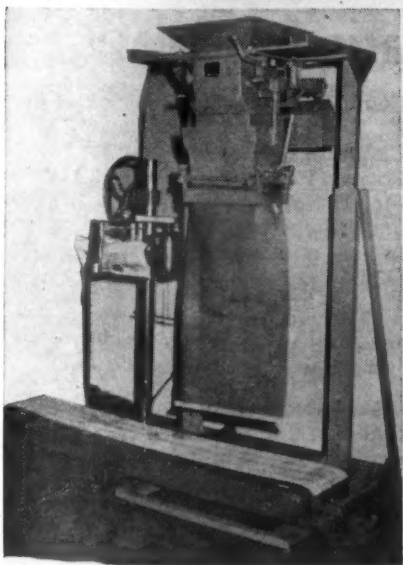
The manner in which the steel industry contributes products to the fertilizer industry is depicted in one of several films available through the United States Steel Corp. The film, "The Waiting Harvest," is one of many listed in a new catalog describing motion pictures distributed by the company. Secure the catalog by checking No. 6514 on the coupon and mailing to this publication.

### No. 6507—Freight Car Apron

The Lite Line Industries division, Copperloy Corp., has announced the development of a new flat apron. Designed to use as bridging between flat cars in truck-rail piggy back service, the aprons can also be used for other applications where bridging is necessary for the movement of heavily loaded vehicles. The aprons are used in pairs. Each weighs less than 100 lb. and measures 30 by 56 in. Other special sizes are also available. Check No. 6507 on the coupon and mail it to Croplife to receive more complete details.

### No. 5595—Scale-Sewing Machine

The Burrows Equipment Co. announces a new combination bagging scale and sewing machine. The Apex bagging scale combines weighing and filling in one semi-automatic operation. The scale will weigh grain, feed, seed, chemicals and most types of



free flowing material at the rate of six to ten bags per minute, it is claimed. The unit is available with either fixed style bag clamp, or adjustable clamp to handle bags from 25 lb. to 200 lb. The scale is mounted on a steel frame which is adjustable for different height bags. The frame is mounted on casters. It is independent of the sewing machine and conveyor. The sewing machine with conveyor belt will sew paper, cloth and burlap bags. The sewing head is adjustable to any size bag up to 40 to 48 in. The conveyor is 6 ft. long, powered with a heavy duty gear head motor and chain reduction operated by foot pedal control.

### Union Carbide Buys Farm in North Carolina for Research

NEW YORK—Union Carbide and Carbon Corp. has exercised an option to purchase a 142-acre farm near Raleigh, N.C., which will be used for experimental work on agricultural chemicals. According to Dr. G. H. Law, vice president—research of Carbide and Carbon Chemicals Co., a division of the corporation, the farm will be used immediately to test Carbide's newest "Crag" weed killers, fungicides, and insecticides.

"We believe that we can get improved pesticides in the farmers' hands faster by the more extensive testing that will be possible on our farm," Dr. Law said. "At present it takes as long as seven years from the time the laboratory produces a chemical to the time it is actually marketed. Now that we have a farm, we expect to cut this in some instances to five years."

The tract purchased lies 17 miles southeast of Raleigh. Proximity to the three institutions comprising the North Carolina research triangle: Duke University in Durham, the University of North Carolina in Chapel Hill, and North Carolina State College in Raleigh, will enable Carbide's farm scientists to work closely with researchers with whom they have had association for several years.

"Carbide's experimental farm reflects the increased need by farmers for pesticides," Dr. Law said. Despite population increases, acreage devoted to cropland in America has remained relatively constant for almost half a century. With population rising an estimated 40-50 million by 1970, not only will the present surpluses be wiped out but still more efficient farming must be practiced to maintain our present standard of living. "A large part of this increased efficiency can come from improved pesticides," Dr. Law said, "as can be easily seen when it is realized that insects, fungi, and weeds cost the farmers of this country about \$11 billion a year in spite of the best currently known control practices," he added.

Dr. Law pointed out that only one out of approximately 2,000 compounds made in laboratories ever proves practical for agricultural use. After being examined for biological activity by Boyce Thompson Institute for Plant Research at Yonkers, N.Y., Carbide's chemicals will be tested further under actual farming conditions on the North Carolina farm. This is expected to make possible the testing of promising chemicals on a larger variety of crops in less time than is possible in government and university experiment stations.

### Chickweed, Wild Turnip Control Needed Now

COLLEGE PARK, MD.—Alfalfa should be sprayed soon for chickweed and wild turnip, says Dr. Paul W. Santelman, University of Maryland extension weed control specialist.

These two annual winter weeds create a problem on Maryland farms each year during the fall and winter months. They start growing in September and continue to grow until they flower and die in the late spring or early summer.

Wild turnip has been found in greater quantities this year than in the past, and chickweed is increasing, too, says Dr. Santelman, who predicts "another bad chickweed year."

Chickweed reduces alfalfa stands by smothering the alfalfa and robbing it of important nutrients and water which are needed for growth.

## What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

The Interstate Commerce Commission granted freight rate increases of 7% and 5% for eastern and western territories, respectively, to the railroads. Despite strong protests from the fertilizer industry, the increase was allowed. Observers in Washington and in other parts of the country predicted that this will force much of the industry to depend on trucks for both long and short hauls of materials.

The Tennessee Valley Authority announced that it had developed a process for shortening the time to produce superphosphate suitable for immediate use in mixed fertilizers, thus doing in 1½ hours a production job that would normally require weeks of curing.

Insect resistance was reported to be on the increase by speakers at the Cotton Production Conference held at Birmingham, Ala. in December. Stress was placed on the need for more research to find answers to many questions concerning resistance and other problems of insect control in cotton. Reports were also made on the progress made in experiments with systemic insecticides which were regarded as successful in 1956 tests.

That fertilizer tonnage is down 4.4% for the fiscal year of 1955-56, ended June 30, 1956, was estimated by the National Plant Food Institute. It said that consumption totaled 19,980,264 tons during that period as compared to 20,902,863 tons in the previous fiscal year.

Farmers, in a referendum vote on Dec. 11, rejected provisions of the soil bank, but observers in Washington said that this should not impair fertilizer sales in 1957.

Tests with systemic insecticides on cottonseed were reported as being successful in 1956 experiments. Two products were cited as being the best tested thus far. They were "Thimet" and "Bayer 19639."

Coastal Chemical Corp. announced that it will build a \$2 million phosphate fertilizer plant at Pascagoula, Miss. It will be put in operation in January, 1958.

Fertilizer meetings were held at Fargo, N.D.; Montgomery, Ala.; St. Paul, Minn.; and Lafayette, Ind., with manufacturers, farmers, and dealers in attendance to take part in "short courses" in soils and fertility. The Ohio Pesticide Institute held its annual meeting in Columbus, and the American Phytopathological Society's annual convention was held at Cincinnati in December.

A hearing before the Interstate Commerce Commission was held in Kansas City the last of November, giving the fertilizer industry an opportunity to testify against the rail carriers' demands for higher freight rates. Industry representatives indicated that the fertilizer economy could not tolerate further increases in hauling costs, and if rates were to be advanced, many firms would be forced to find other means of transportation.

A fertilizer industry committee met at Iowa State College to discuss the pros and cons of listing fertilizer grades in terms of elemental vs. oxides. Numerous arguments against a switch to NPK listings were registered by industry representatives.

J. E. Meggs, Nichols Fertilizer & Chemical Co., Oklahoma City, was named president of the Oklahoma Plant Food Educational Society at the group's meeting at Stillwater Nov. 28.

Hercules Powder Co. announced the names of six national winners of \$300 college scholarships in the National 4-H entomology awards program. Winners were from Connecticut, Illinois, Mississippi, North Carolina, Oklahoma and Wyoming.

A fly control program for California was announced by entomologists of the University of California. The program will utilize the facilities of the Davis, Riverside and Berkeley campuses of the University in screening various insecticides for this purpose.

Sales of mixed fertilizers and fertilizer materials in Canada, for direct application to the soil, amounted to 1,671,497 tons in the year ended June 30, 1956, the Dominion Bureau of Statistics reported. This figure was an increase of 3.9% over the previous fiscal year.

USDA economists declared that the commercial corn belt will be the prime target for fertilizer sales in 1957, because of the way government funds will be distributed.

The New Jersey Pesticide Dealers' Conference, held at Rutgers University brought forth the information that 1957 is likely to be a year of great infestation of corn borers in that state.

The fertilizer industry, and particularly the potash segment of the trade made strong protests to the Interstate Commerce Commission against granting the railroads a further increase in freight rates. Potash, mined for the most part in New Mexico and shipped to all parts of the nation, was said to be particularly vulnerable to added hauling costs.

A panel at the American Society of Agronomy discussed various aspects of how to close the wide gap between recommended fertilizer practices and the relatively small amounts of plant food currently used in the U.S. Dr. A. H. Bowers, Swift & Co., Chicago, was in charge of the panel. Texts of the talks were presented in Croplife's issue of Nov. 26.

The weed control conference at Washington State College, Pullman, pointed up the heavy losses caused by weeds in both agriculture and industry and discussed ways and means of controlling these unwanted plants. The meeting attracted more than 100 persons from the states of Washington, Oregon, Idaho and the province of British Columbia.



# Better Selling

Richer Sales Fields for Dealers



Doing Business With

## Oscar & Pat



By AL P. NELSON  
Croplife Special Writer

It was January, cold and with two feet of snow. Christmas was just a memory, and farmers were grimly facing tax dates and cutting their expenses accordingly. In line with the temporary lull in buying merchants, too, particularly Schoenfeld & McGillicuddy, were watching their expenditures, trying to whack them down for a month until farm buying picked up.

Of course, the cutting down was Oscar Schoenfeld's idea, for he always guarded the pennies as well as the dollars. No one had ever been known to get an advance on salary out of Oscar, no matter what the emergency. Employees should budget their income, he always said, and make finances last until the next payday. They should not bother an employer about advances.

Now Oscar looked up from his desk, glanced at plumpish, ulcerish Tillie Mason, the bookkeeper who sat at a desk not too far away. "Ach, where is that Red Cochran? I have not seen him since two o'clock. He has been gone almost three hours. I didn't give him any order to deliver."

"Oh," said Tillie looking out the window into the loading yard. "There he comes with the No. 3 truck now. Looks like he's got a load of something, in boxes and barrels."

Oscar got to his feet, went to the window, adjusted his glasses and stared. "We didn't buy anything," he said. "We are not buying anything this month. We are cutting down till after tax time. I will see about this."

Oscar put on his seven year old red and black striped mackinaw, his five year old felt hat, his eight year old ear muffs, now largely minus the fur, and stomped out into the warehouse.

Red Cochran, the young, muscular employee was standing on the loading platform smoking a cigarette and talking with Jim Bestor, another employee.

"What is that stuff?" Oscar asked irritably, pointing to the boxes and barrels in the back of the No. 3 truck.

"That?" Red Cochran turned to look at the truck. "Oh, that's some stuff Pat bought from a couple of garden and fertilizer dealers that went bankrupt. Andrae over at Boltonville, and Hammersmith over at Strawberry Point."

Oscar snorted. "He did, eh? Ach, and why wasn't I told about this? That Irishman does too many things on his own. You can take that stuff right back, Cochran."

Cochran took one look at Oscar's flushed face, his flashing eyes. Coolly, he said, "Not till Pat gets here, which oughta be any time now. He tells me to haul the stuff here. You tell me to take it back. You guys better get your directions ironed out."

"We will see about this, Cochran," snapped Oscar. "I have just as much to say in this business as Pat has. Buying, buying this terrible bankrupt stock—and in such a bad month, too."

"They was glad to sell it to him," Cochran said. "Gee, when I called for it they almost kissed me, and helped me load it. They wanted it cleared out."

Oscar groaned. "Ach, I'll bet that Pat got hooked again. Him and his ideas. Now I know I can never trust

him alone in this store for even a day."

Angrily the portly Oscar went back into the office, whipped off his mackinaw, hat and mittens. He seated himself at his desk, stared straight ahead and drummed his fingers on the desk. Tillie knew he was angry and upset, and so she reached for an ulcer powder as a precaution. Ann Hydrous, the Maltese cat, slept peacefully on top the safe, not knowing how upset one of her masters was.

About a half hour later Pat came in, his cheeks red from the cold, his blue eyes glowing.

"What are we going to run now?" Oscar asked coldly. "A junk shop?"

"No. What do you mean?"

"That stuff you bought from those bankrupt dealers," Oscar intoned relentlessly. "I thought we were going to hold down on buying this month."

"I never said that," Pat returned levelly. "You did."

"And what are you going to do with that—that junk?" Oscar asked.

"I couldn't resist buying it, Oscar. I've got an idea for a sale we can put on with it."

Oscar slapped a palm against his dampening forehead. "Ach, another sale and this month! Taxes are due in two weeks, you, you spender."

"Sure they are," Pat said, "but that doesn't mean that all the farmer has is enough money for taxes. He's just scared. He will buy if somebody gives him confidence, offers good bargains. We've got to loosen farmers up, get them thinking about something else besides taxes."

"And that, that junk will make them think of something besides taxes?"

"It will help," Pat grinned. "You see I plan to hold a cracker barrel sale, Oscar. We had one last year and it was a success, you'll remember. We furnished free cheese and crackers for customers on those two days and had lots of bargains."

"Ach and the mess they made with those crackers all over the place."

"But sales went up," Pat said. "This year, I have lots of garden merchandise—small stuff—and some insecticides, etc. we can put in about ten barrels and set a price of 25¢ on each item, first come, first served. I got this stuff very, very cheap. We can afford to use it this way."

"Another giveaway," moaned Oscar.

"In one sense, yes," Pat said, "but we give away so little, and we get so much. Farmers like bargains. They'll come flocking in for those 25¢ items. They can't duplicate them anywhere

else. And I've got something for farm women—free. That will bring them in."

"Himmel," said Oscar. "More free stuff. McGillicuddy, why don't you stop roaming around the country visiting bankrupt stores and start collecting money people owe us?"

"I only paid \$67.50 for all that merchandise," Pat said, "and it includes 75 planters. I will give one planter free to the first 75 farm women who come here on a certain day. And we'll pack the store."

Oscar looked very stubborn. "And what will we get out of it?"

"We will build store traffic," Pat said, "and we'll book lots of spring fertilizer orders and field seed orders from the crowd. I know that. Now give me a check for \$67.50 to reimburse me. I paid those dealers out of my own pocket."

Oscar looked more stubborn than ever. "I only pay bills three times a week," he said. "Saturday's two days away."

Pat looked surprised. "But surely you can make an exception in my case. Nora and I need that money."

"A business has to be run on a set policy," Oscar said bluntly. "Give me a bill and I'll pay it Saturday. I will take the usual 2%, too."

Pat's mouth gaped. "Why, you—" he broke off. "I'm going across the street for a cup of coffee before I lose my temper and bust somebody." And as Pat went out the door, roaring mad, Oscar smiled thinly. "I will show him," he said. "Ach, he can sweat for his money for two days. Maybe now he will come and tell me about his schemes before he goes and spends our money."

## Louisiana Dealers Advised that Price Tag Alone Is Poor Basis for Sales

BATON ROUGE, LA. — Fertilizer, insecticide and seed dealers were urged to sell their products based on plant food needs, climatic conditions and best varieties for certain localities at the recent northwest area fertilizer meeting held at the Red River Experiment Station, La.

This report comes from W. E. Monroe, agronomist, and Kirby L. Cockerham, entomologist, Louisiana State University Agricultural Extension Service, who attended the meeting.

## Arkansas Farmers Use Less Tonnage, But More Nutrients

FAYETTEVILLE, ARK. — Arkansas farmers are not using as many tons of fertilizer as formerly, but they are adding more plant nutrients to their soils, according to a report just released by the University of Arkansas' Agricultural Experiment Station.

Dr. D. A. Hinkle, who is author of the report, says that this increase in plant nutrients has resulted from the use of higher analysis grades of mixed fertilizers and an increase in the use of materials relative to grades. The total tonnage of fertilizer decreased 13.8% during the period studied, but the amount of plant nutrients increased by 6.9%.

Arkansas state law requires tonnages of fertilizer grades and fertilizer materials sold for use in Arkansas to be reported to the State Plant Board. Annual summaries of such sales by materials and grades, as issued by the State Plant Board, were used as sources of statistical data for the fertilizer portion of the report. Figures on use of lime in Arkansas were obtained from the National Agricultural Limestone Institute, Inc., Washington, D.C., and the state administrative officer of the Arkansas Agricultural Stabilization and Conservation Committee. The objective of the study was to analyze fertilizer and lime sales in Arkansas during the five-year period of 1951-1955.

On the basis of nitrogen supplied, ammonium nitrate ranked first, anhydrous ammonia second and sodium nitrate third. These materials accounted for about three fourths of all nitrogen sold. Ordinary and triple superphosphate were the most important sources of phosphorus sold. The popularity of the 20% grade has declined during recent years, while increased use has been made of the higher analysis grade. Muriate of potash was the dominant source of potassium.

Over three fourths of all the lime used was applied under the federal cost-sharing programs.

County agents who participated were C. B. Carroll, Caddo Parish; D. E. Cummings, Bossier Parish; M. L. Cooper, Red River Parish; R. U. Johnson, DeSoto Parish; and J. K. Gladney, Webster Parish. Dealers and dealer representatives were participants.

The old practice of farmers purchasing products by the price tag alone was discouraged.

Mr. Cockerham told the dealers that specific insecticides should be stocked for sale to farmers in the Northwest area. He said the practice of buying an insecticide because it was cheap, or because someone had recommended it, had too much of a "chance" element.

"We felt that the meeting had great educational value," asserted Mr. Monroe. "Emphasis was put on the intelligent selection of fertilizers, insecticides and seeds. When we can go into all of Louisiana's 64 parishes and make such recommendations we can feel assured that farm people will be using the best fertilizers, insecticides and seeds to meet their needs."

The northwest area meeting was the first of a series to be held in Louisiana this winter. Other sessions all to be held at the parish level, will be called by the county agents and will be held in January, February and March.



OUTDOOR CAMPAIGN—Virginia-Carolina Chemical Corp. is using an outdoor winter and spring advertising campaign covering farming areas in mid-western and southern states. Coverage has been scheduled to coincide with the seasons of fertilizer use in the various areas.



## ALABAMA RETAILER SAYS:

## Farm Meetings, Sponsored by Extension Agents, Give Dealers Big Selling Push

The fertility of the soil in various sections of the nation differs and the nutrients which must be supplied to the soil need to be studied carefully by the fertilizer dealer, if he is to prosper, so states A. R. Ethridge, who has been manager of the Farmers Marketing & Exchange Assn., Tuscaloosa, Ala., for the past 15 years. In addition to selling many other farm supplies, this firm sells more than 1,500 tons of fertilizer annually.

Because soil in this area has a tendency toward acidity, this firm stocks and sells a lot of lime and basic slag. Quite a bit of the nitrate fertilizer which is stocked has a coating of lime, too.

"No matter what type of deficiency the farmer has in his land today there is a fertilizer which he can use effectively," reports Mr. Ethridge. "The farmer is getting to know this, and he relies upon the fertilizer manufacturer and dealer so much that he accepts their recommendations, for the most part. However, the farmer is not applying as much fertilizer as manufacturers and dealers recommend, but that day perhaps is coming. Farmers do not apply as much fertilizer as even the county agent recommends, but they are using much more than they did five or ten years ago."

Mr. Ethridge credits the county agent and extension services in the area with being a primary factor in educating the farmer on the advantages of better fertilization and insect control. These agencies hold at least 20 meetings per month in the trade area, and at least in 15 out of the 20 nowadays fertilizers and insecticides get mention, explanation and recommendation. That is because these products are doing so much to help the farmer get better returns from his land, his seed and his labor, Mr. Ethridge says.

"I am not ashamed to admit that I attend many of these county agent sponsored meetings myself," he says, "for I want to know what the farmers are being told. I learn a great deal, too, to supplement my own knowledge. These county agent workers really sell fertilizer and insecticides for the industry and do the farmer a service at the same time."

This dealer points out that the South is advancing rapidly in the field of agriculture. The local county 4-H clubs have 1,300 members, and there are over 1,200 tractors in the area. The average farm is about 80 acres, although there are many smaller ones, too.

Farmers are using 6-8-4 and 4-10-7 on cotton, 6-8-4 on potatoes and 4-12-12 on peanuts. Many of the fertilizers used in this area, too, have added elements. Corn is liberally side dressed.

This company sells fertilizer in both bag and bulk. It also spreads some for farmers, by putting it in drills for row crops. Large quantities of lime and basic slag are sold to help sweeten the soils.

"Our seed department is a real traffic builder," says this manager. "Once the farmers and gardeners start coming in to buy seeds in spring, then fertilizer begins to move rapidly. We have good storage facilities in our building, can take our trucks right inside through big doors to load and unload. This helps us give good service and saves labor costs."

"We sell both field and garden seeds, and most of our sales on seed corn is now all hybrids. The open

pollinated type is in very little demand. We carry only a small stock of it.

"When I first came to manage this store, farmers were getting only 15 to 20 bu. per acre with open pollinated. Now they get over 56 bu. per acre with hybrids, and some even reach 100. Word of bigger yields like this, due to hybrid corn and fertilizer, soon spreads over the county, and then all other farmers want to follow suit."

Mr. Ethridge also has a fine stock of insecticides and spraying equipment in a 25 by 20 ft. front showroom, where he has several neat islands. These products sell very well, but he says they require more explanation than does fertilizer. While farmers are pretty well informed on fertilizers, they ask for more advice on insecticides and spraying. This means that the sales force must know the products well and their uses. Mr. Ethridge trains his staff on how to sell insecticides, for he knows that a satisfied customer here can boost the business as much as a satisfied fertilizer customer.

"I have seen agriculture change rapidly in the last 15 years I have been in this business," says Mr. Ethridge, "and it is going to change still more, especially in the South, due to crop diversification, which is coming rapidly, and the wider use of fertilizers and insecticides."

## Pink Bollworms Build Up in 1956

EL PASO, TEXAS — During 1956 the pink bollworms built up to a larger infestation than ever before, according to G. G. Harris, district leader of the Pink Bollworm Service at El Paso.

In some areas the worms damaged cotton as much as a fourth of a bale per acre, Mr. Harris said. The new Supima long staple cotton also suffered from the worms, because the insects left the earlier-maturing short staple cotton and entered nearby fields of Supima.

Despite the heavy infestation last year, the future of pink bollworm control looks very promising. This last crop season several farmers controlled the worm by using DDT.

"We think it will give satisfactory results," Mr. Harris said. "It should be applied when there is one half of one per cent infestation and then used about every seven days until nearly the middle of September."

## Advisory Group

WASHINGTON—Plans for the appointment of a special advisory committee on policies and four additional task groups, to advise the President's bipartisan Commission on Increased Industrial Use of Agricultural Products, were announced recently by J. Leroy Welsh, commission chairman, Omaha, Neb. One of the additional task groups will be for agricultural residues.

## NORTH CAROLINA SHIPMENTS

RALEIGH, N.C. — North Carolina fertilizer shipments during October totaled 62,001 tons, compared with 74,504 tons in October a year earlier, according to the North Carolina Department of Agriculture. Shipments for the four month period of July-October totaled 129,265 tons, compared with 136,678 tons in a comparable period in 1955.



## FARM SERVICE DATA

Extension Station Reports

A. H. Walker, Texas A&M extension range specialist, says a recent study showed that a single large mesquite tree was using all of the water from one-sixth acre of cropland.

The farmer on whose farm the study was made reported that the tree cost him \$9.10 last year. He averaged a half bale cotton to the acre on his other cropland but got nothing from the area around the tree. He stopped and did a little figuring and for less than 5¢ killed the tree.

On another farm, Mr. Walker said, no crops were growing for a distance of 90 feet from a brushy fence row. In one mile of fence row the farmer was losing 10 acres of cropland. Countywide surveys have shown that in many counties upwards of 5,000 acres of cropland are not producing crops because of fence row thieves. Mr. Walker says if fence rows, trees and brush are not controlled, the farmer would at least save his planting seed, time and labor by not trying to produce crops close to brushy fence rows. This, he adds, would be a waste of good cropland and not very good management.

Now is the time of the year to apply chemicals to these moisture and soil nutrient robbers, Mr. Walker says. Research and many farm demonstrations have shown that best control is obtained by spraying the cut-off stump, the trunk base or by applying a solution in frills to the standing trees.

★

Agricultural progress continues in South Carolina as shown by information presented in the 1955 annual report of the Clemson Agricultural Extension Service.

Last year farmers of the state set 11 new high records of production. Of the 11 new records, 4 are for new high records in the total production of principal crops, livestock and livestock products, and 7 are for new high average yields per acre of crops or average production per animal.

These new high production totals for the state are: tobacco, 198,900,000 lb.; soybeans, 2,592,000 bu.; milk produced, 597,000,000 lb., and eggs produced, 510,000,000.

The new high average records for per-acre production of crops are: tobacco, pounds per acre, 1,700; corn, bushels per acre, 28; peanuts, pounds per acre, 950; soybeans, bushels per acre, 15, and hay, pounds per acre, 2,020. New high averages of 3,930 pounds of milk per cow and 179 eggs per hen were established.

★

An insidious weed parasite that destroys corn and other crops of the grass family by attacking their roots has appeared for the first time in the United States at more than 40 scattered locations in North and South Carolina.

Allan Kates, weed-control specialist at Virginia Polytechnic Institute, says Virginia farmers should be alerted to a possible invasion of the pest.

If the weed parasite, known as "witchweed," becomes widespread, it could destroy more corn than the European corn borer, whose depredations cost farmers more than \$80,000,000 yearly.

How witchweed got to American shores from South Africa and the Far

East is still unknown. U.S. Department of Agriculture scientists are studying trap crops, use of chemicals and rotation practices as possible means of control.

For about a month after its seed germinates, the witchweed grows entirely underground, often several inches below the soil surface, living off its host. Then it emerges from the soil as a bright green plant. A month or so later the weed puts out small flowers, usually bright red, but sometimes white or yellow. Most plants do not grow taller than 8 or 9 inches, but they may range up to 18 inches.

Witchweed seems to prefer light soils, considerable moisture, and warm temperatures, but in South Africa it has shown ability to grow under a wide range of conditions. Most plants attacked by witchweed die within a few weeks after symptoms of wilting first appear, Mr. Kates said.

## TENNESSEE DEALER

(Continued from page 1)

too, for we are able to learn a great deal there as well."

Cotton poison is in considerable demand in the area for control of the boll weevil, and the Hayes store has large stocks of both products.

Insecticides in season occupy a large area of the store display space, as do seeds. The store sells both garden and field seeds. The farmer who buys seeds is a natural customer for fertilizer and the same is true of the average gardener who buys seeds. The latter picks up his fertilizer by the bag and pays full price.

A sizable number of both hand and power sprayers is kept in stock. Because of the long, warm growing season, the large number of insect pests which is active many months of the year means a continual spray program is needed to get maximum, quality crops. Customers, say the Hayes brothers, are well aware of the fact that a good spray program is vital.

The store also sells feeds, but has no grinding or mixing facilities. A couple of interesting side lines are also engaged in. The first is a television department. The store sells, installs and services television sets. Most of the sets are sold to farmers, many of whom are fertilizer customers. There have been some cases, Mr. Hayes reports, where a new farmer came in to buy a television set and later became a good fertilizer customer as well.

As an accommodation to farmers, the Hayes brothers buy hams from farmers and then cure them by hanging them wrapped from a ceiling in one part of the store. This method of curing and storing hams is quite popular in many areas of Tennessee. It also provides farmers with some extra income, thanks to feed and fertilizer dealers who cooperate with the program.

The Hayes firm buys about 250 of such hams each year from farmers, cures them for five to six months and then sells them at from 75¢ to \$1 per pound. Many tourists, traveling salesmen and others know which stores sell such hams each year, and they order some annually, either in person or by mail.



*if your product is marketed  
through distributors and dealers...*

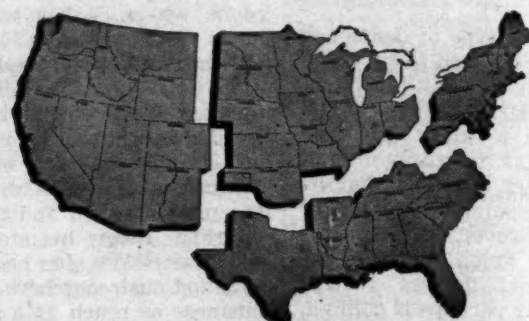
# Croplife is for YOU!

**AN IMPORTANT EXCLUSIVE** is available to advertisers whose agricultural chemical products are marketed through distributors and dealers. It is Croplife's unique *regional crop-area circulation plan*, carefully developed to fill an urgent need in the industry's marketing and advertising facilities—the need of advertisers to reach the dealers and distributors and farm advisers with an up-to-date story of their products and their consumer promotion plans.

**THIS IS THE PLAN:** In addition to the weekly circulation to manufacturers and formulators, Croplife is distributed on a regional crop-area basis to the dealer-distributor-farm adviser segment of the industry. The merchandising section in each issue of Croplife is specifically edited for dealers in one specific region. This carefully planned editorial formula insures intense reader interest.

More than 15,000 DEALERS, 1,700 custom operators and 1,000 farm advisers receive the issue of Croplife specifically edited for their regional crop-area once each four weeks. The mailing schedule for this group covers consecutively four geographic regions of the United States (see map) with one of four regional dealer issues: The Northeast Dealer Issue, the South Dealer Issue, the Midwest Dealer Issue or the West Dealer Issue. Each week Croplife goes to more than 4,500 dealers, distributors and farm advisers in one of these four regional crop-areas.

**THIS CIRCULATION EXCLUSIVE** is available only through Croplife. The regional crop-area circulation to dealers has been carefully developed to fit the particular needs of the agricultural chemical industry. Many individual products have been developed and approved and are being sold for use on a specific crop; therefore, marketing and promotion plans must be directed specifically to the appropriate crop-area. Croplife's dealer circula-



In addition to its national coverage, Croplife offers a selective regional circulation plan in these crop-areas

tion developed along crop-area lines offers advertisers the *most flexible medium possible*, designed to give "direct-hit" coverage for specific messages without the higher cost of a larger-than-necessary circulation on an inflexible nationwide basis. Advertisers interested in reaching dealers in more than one region can do so easily and economically with a selective advertising schedule.

**HOW TO USE THE PLAN:** Select the regional crop-areas—Northeast, South, Midwest or West—in which you need to reach dealers, distributors and farm advisers with the up-to-date story of your products and your consumer promotion plans. Plan your message to inform and to educate this group. Then, select the appropriate issues of Croplife to carry your advertisements. Croplife's printed circulation statement outlines the four regional crop-areas in detail and gives the issue-by-issue mailing schedule. Ask us for a copy.

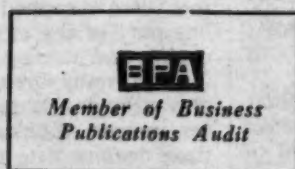
## AND NOW—4000 more selected dealers have been added!

**BEGINNING IN 1956** this important circulation exclusive became even more valuable to advertisers who are reaching dealers through the pages of Croplife. An additional 4,000 selected dealers handling agricultural chemicals are now receiving the issues of Croplife edited specifically for their crop-areas. One thousand dealers in each regional area were screened and verified and have been added to Croplife's controlled circulation plan, bringing the

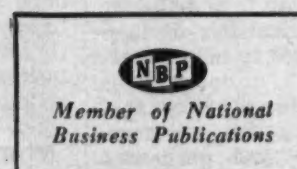
total number of dealers, distributors and farm advisers receiving Croplife to more than 18,000. Each week Croplife goes to more than 4,500 of these interested readers in one of the four regional crop-areas.

**MAKE YOUR PLANS NOW** to capitalize on this unique advertising opportunity, exclusively through the pages of Croplife.

*WRITE-WIRE-PHONE for the full story of your advertising opportunity in*



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612 Board of Trade Bldg.  
VICTOR 2-1350

**MINNEAPOLIS**  
2501 Wayzata Blvd.  
FEDERAL 2-0575



## OVER THE COUNTER

(Continued from page 9)

tempt to steer his thinking onto the features of the merchandise.

The customer was made to wait around in the store while the salesman "passed the time of day" with a friend, became impatient and was in a bad mood when the salesman finally decided to take care of his needs.

When the customer failed to buy the specific item the salesman made no effort to sell him something else from the store stock or to interest him in other merchandise on display.

The merchandise display was so crowded that it was impossible for the customer to thoroughly inspect the item in which he had interest.

The customer had never heard of the brand carried because the dealer had failed to advertise it or push it in his regular advertising program and therefore was mistrustful of the goods.

The salesman lacked sufficient detailed information about the merchandise in question so could not explain all of its practical uses or point out its good features to the customer.

Poor storekeeping had left dust around the merchandise, the display was jumbled and uninviting and discouraged the customer's interest once he had seen the item.

The customer had prejudices against the brand stocked and the salesman was unable to discover exactly what these were or how to persuade him that they were unfounded.

The customer was sold on another brand and the salesman made the mistake of running down this brand rather than building up the one carried. This angered the customer by questioning his judgment.

Things had gone wrong at home that morning and the salesman's attitude toward the customer was surly and uncooperative instead of bright and happy.

Prices were completely out of line with those of competitors and the customer felt that the store was trying to "gouge" him so he went to a competitor's store.

The merchandise handled was outdated and had been replaced by newer goods which the firm was keeping back until it had disposed of all of the old items.

The salesman failed to impress on the customer that he should buy the item he desired today and not put off its purchase until another day (and in another store) by extolling the immediate use it could give.

In the hurry to take care of other business the salesman tried to rush the customer into the purchase without helping him to decide on features that were doubtful in his mind.

The salesman's personal appearance was slovenly and distracting so that the customer was never in a receptive mood to buy.

The salesman was so unfamiliar with the merchandise and its specific application that he was unable to answer important questions the customer had in mind and therefore could not convince him the specific item was the one that would fill his very need.

The store failed to have in stock an accessory item which was necessary to the use of the one carried in stock and which the customer came in to buy.

The customer came in with a specific problem and the salesman did not have the knowledge to help him solve it or the merchandise which he could use in solving his problem.

The store had advertised a good special without an adequate stock to meet the demand created by this

promotion and therefore had to turn the customer away unhappy.

The salesman's own lack of confidence in the quality of the merchandise was such that he could not personally guarantee it to the customer who became suspicious not only of the merchandise but of the store as well.

The salesman's lack of enthusiasm to make a sale to an obviously doubtful customer was so evident that the customer felt he was wasting his time in the store.

The salesman failed to ascertain the customer's main point of interest in the merchandise and build the selling effort around this particular desire which brought him into the store.

The customer was disappointed and mistrustful on seeing the actual merchandise because of exaggerated claims made in advertising or other promotional effort.

Efforts to sell the customer a wide profit margin item rather than the one he specifically requested created antagonism that resulted in loss of the sale.

The chain of the sales effort was broken by an interruption which de-

stroyed all of the cumulative sales effect aroused in the customer's mind and this could not be rebuilt.

The salesman talked of nothing but price in trying to sell the merchandise so that the customer became mistrustful of its quality.

The salesman attempted to high pressure the customer into buying quickly instead of helping him to sell himself on the goods he had come in to inspect.

The sales staff was unable to answer questions concerning how the unit operated or about materials of which it was made which were the points of doubt in the customer's mind.

The language used in selling went completely over the customer's head so that the points left no impression whatsoever.

There was a defect in the displayed item which the customer saw so he completely mistrusted all of the others in the same display.

All of the foregoing are reasons why customers have walked out of stores without buying merchandise; they occur again and again during every selling day. The more of them that the dealer can eliminate the fewer "no sale" buttons he will have to punch on his cash register during any given day.

## Better Selling

Richer Sales. Fields for Dealers

## Department of Agriculture Proposed for Arkansas

LITTLE ROCK—The 1957 Arkansas legislature, which convenes Jan. 14, will be asked to create a State Department of Agriculture to assume duties now held by the State Plant Board, State Apiary Board and State Livestock Sanitary Board. The proposed department also would take over the soil conservation and flood control functions of the Geological and Conservation Commission.

Representative Clayton Little of Benton County has announced plans to draft a bill which would put the activities of these groups under a seven-member State Board of Agriculture, with the board members to be appointed by the governor, one from each congressional district and one at large for the entire state. The group would employ a commissioner of agriculture to administer the department.

## KENTUCKY SALES

LEXINGTON, KY.—Fertilizer sales in Kentucky during October totaled 36,595 tons, compared with 34,965 tons in October, 1955. Sales in the July-October period this year totaled 74,866 tons, a gain from 68,353 tons in a corresponding period in 1955.

## Books on Fertilizers And Their Use

## MANUAL ON FERTILIZER MANUFACTURE—Second Edition

Vincent Sauchelli

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# Statistics Show Spectacular Increase in Direct Application Of Nitrogen in Past 9 Years

By J. RICHARD ADAMS and WALTER SCHOLL

Fertilizer and Agricultural Lime Section  
Soil and Water Conservation Research Branch  
Agricultural Research Service  
U.S. Department of Agriculture  
Beltsville, Maryland

Fertilizer consumption in the United States and Territories showed an annual increase in tonnage from the termination of World War II to the fiscal year ended June 30, 1953, except in 1950, when there was a slight decrease. Consumption dropped again in 1954 and 1955.

These changes in consumption were accompanied by a steadily increasing use of higher-analysis fertilizers. The average nutrient content of fertilizers supplying one or more of the primary plant nutrients—nitrogen, available phosphoric oxide, and potash—was 21% in 1946 and almost 28% in 1955. The use of these nutrients has increased annually since 1946.

This is true even for those years when the total consumption of fertilizer declined and was due to the trend in using fertilizers of higher nutrient content. Nitrogen showed the greatest increase in consumption. The use of nitrogen almost tripled over this 10-year period.

Commercial nitrogen is supplied the farmer in the form of fertilizer materials and mixtures. The materials are products containing one or more plant nutrients. They can be applied directly to the soil, or used in the preparation of mixed fertilizers. When applied to the soil, they are often classed as "simples," "separate materials," or "direct-application materials" to differentiate them from mixtures.

The form and amount of nitrogen applied to the soil has changed radically in the last 10 years. Less than half the fertilizer nitrogen was applied as separate materials in 1946, and by 1955 almost 60% was in this form (figure 1). The consumption of nitrogen in mixed fertilizers during the same period increased annually except in 1950, when there was a slight drop. The rate of increase was not as great as with the nitrogen in separate materials, and by 1950 the quantity used for direct application to the soil exceeded that in mixed fertilizers. The difference in the quantities used in these two forms has continued to widen since then.

Direct-application nitrogen materials are used as supplements to mixed fertilizers or on soils or crops in need of a specific nutrient. Nitrogenous fertilizers in this category may be either solids, liquefied gas, or aqueous solutions. Previous to the early 1930's all the commercial nitrogenous products used for this purpose were solid materials.

The solid nitrogenous materials customarily applied directly to the soil as such are chemical products except for the dried manures, which are used in considerable tonnage, and smaller quantities of other natural organics. The major products are ammonium nitrate, ammonium sulfate, and sodium nitrate. Other chemical materials are calcium cyanamide, calcium nitrate, urea, and the ammonium phosphates.

Urea (45% nitrogen) and ammonium nitrate (33.5% nitrogen) are the most concentrated solid nitrogenous fertilizer materials. Ammonium nitrate is often sold in the form of ammonium nitrate-limestone mixtures containing 20.5% nitrogen. The limestone in these mixtures is sufficient to overcome the acid-forming

tendency of ammonium nitrate.

The only liquefied gas used as a source of plant nutrients is anhydrous ammonia. This product contains 82% nitrogen and is the most concentrated nitrogenous fertilizer. It exerts a pressure of 211 p.s.i. at 104° F. and is commonly called a high-pressure liquid in differentiation from the low-pressure and nonpressure solutions.

Anhydrous ammonia was first used commercially as a direct-application material early in the 1930's. This use was confined almost exclusively to the West Coast until after World War II. The increased use since then is due to the large supplies of ammonia and the price of a unit of nitrogen in this form. Nitrogen solutions also came into use to help satisfy the mounting demand for separate materials containing nitrogen.

The low-pressure solutions are aqueous solutions of ammonia alone (aqua ammonia) or in combination with ammonium nitrate or urea. The nitrogen content of these solutions varies from about 25 to 41%. The solutions usually have vapor pressures of less than 25 p.s.i. at 104° F.

The non-pressure types of solutions exhibit no appreciable vapor pressure and comprise aqueous solutions of ammonium nitrate alone or in combination with urea or sodium nitrate. They contain from 16 to 32% of nitrogen.

The low-pressure and non-pressure solutions, with the exception of aqua ammonia are commonly called nitrogen solutions. They are sold under various trade names which often indicate their nitrogen content and the products in solution.

Since 1946, the greatest tonnage of direct-application nitrogen has been supplied by ammonium nitrate and

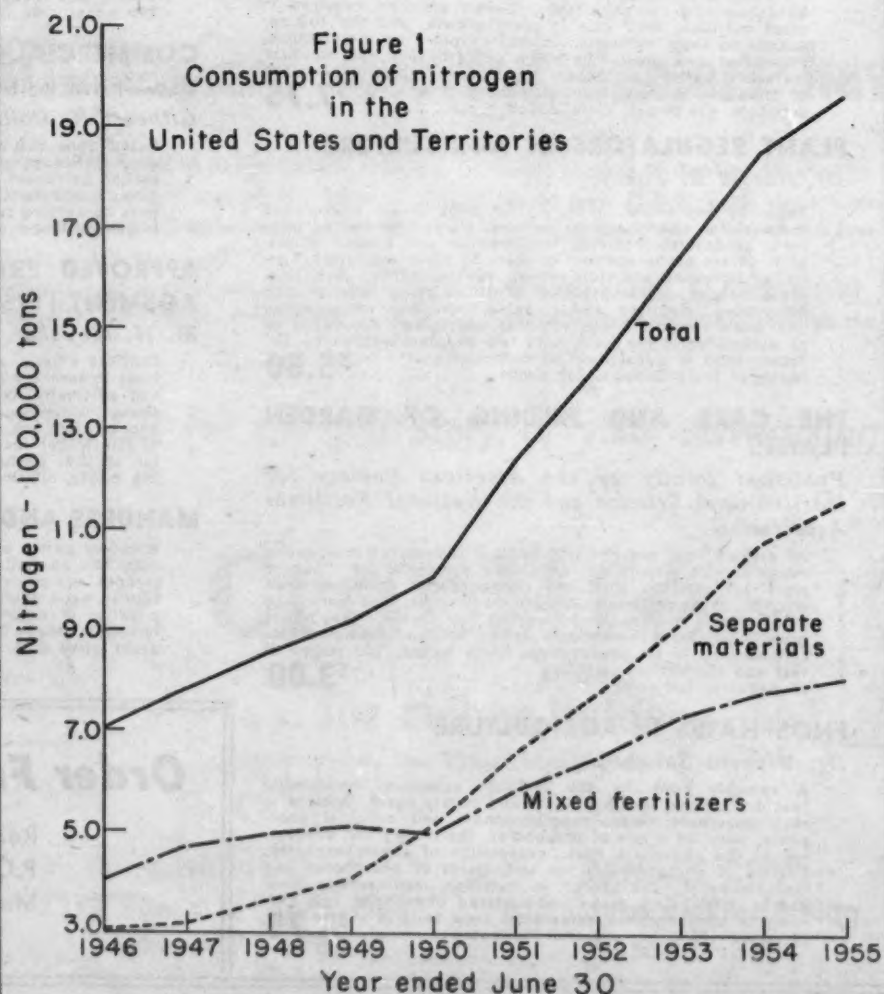
ammonium nitrate-limestone mixtures (figure 2). Anhydrous ammonia occupies second place; it has been ahead of ammonium sulfate and sodium nitrate since 1948 and 1951, respectively. Consumption of anhydrous ammonia increased over 60% between 1953 and 1954, and by 1955 this material supplied almost two-thirds as much nitrogen as ammonium nitrate.

Tonnages of nitrogen from ammonium sulfate, though relatively small in recent years, increased steadily from 1946 to 1954, after which there was a slight decrease. The use of sodium nitrate, erratic since 1946, showed an over-all decrease. Annual consumption data for nitrogen solutions (including aqua ammonia) previous to 1947 are not available, but since 1949 their use has increased each year and at an accelerated rate since 1953.

The changing picture of the portion of direct-application nitrogen supplied by the various materials is of special interest (figure 3). The portion of nitrogen in the form of ammonium nitrate ranged from 34% to almost 44% but followed a rather erratic course in doing so. Sodium nitrate supplied over 36% in 1946 and less than 9% in 1955.

During the same period the nitrogen from ammonium sulfate dropped from a high of almost 15% in 1951 to a low of less than 10% in 1955. An additional 10 to 12% of nitrogen in solid form was supplied by calcium cyanamide, calcium nitrate, ammonium phosphates, and other nitrogen-bearing materials.

While the percentage of direct-application nitrogen in solid forms was decreasing, the proportion from liquid sources was increasing. A little over



a quarter of the nitrogen was supplied by anhydrous ammonia in 1955 compared with 7% in 1947. The increase was continuous from 1947 to 1954, after which there was a slight drop. At the same time, the portion supplied by nitrogen solutions, although still relatively small, has shown an accelerated increase since 1953 from approximately 2% to 7% in 1955.

The U.S. Department of Agriculture first collected statistics on the consumption of ammonia for direct application in 1946-47, and the first published figure appeared in the 1947-48 fertilizer consumption survey. Prior to 1954 only national figures were published. For the first time, State figures were given for all regions in the 1954-55 fertilizer consumption survey and it is now possible to report State data for the preceding years for all States except those in the Mountain and Pacific Regions. These data are shown in table 1.

Trends in regional consumption are shown in figure 4. In only 3 Regions—South Central, Mountain, and Pacific, was anhydrous ammonia used for direct application prior to 1950. Use in the Mountain and Pacific Regions increased continuously up to 1955, except for a slight recession in 1949. Consumption in the South Central Region attained a peak of 103,846 tons of nitrogen from anhydrous ammonia in 1954.

Consumption of anhydrous ammonia for direct application in the North Central Region was first reported in 1950 and the only States in this region in which it was used at that time were Indiana, Iowa, Illinois, Missouri, and Kansas. Anhydrous ammonia has been used in all the States of this region since 1952.

The increase in consumption in this region amounted to almost 600% between 1952 and 1954, with the greatest tonnage increases occurring in Illinois and Nebraska. Consumption of anhydrous ammonia in the North Central States exceeded that in any of the other regions in 1954, when it reached a peak of 105,427 tons of nitrogen.

The use of anhydrous ammonia for direct application has developed slowly in the eastern States. It was used first in the South Atlantic States in 1950 in Georgia and in 1951 in the Middle Atlantic Region in New Jersey and Maryland. In 1954, some anhydrous ammonia was being used in all the States of these 2 regions. Connecticut is the only New England State in which anhydrous ammonia has been used for direct application and there it has been used only since 1953 in token amounts.

In 1955, 290,337 tons of nitrogen in the form of anhydrous ammonia was used for direct application in the United States and Territories (table 1). This was 25.1% of all the nitrogen consumed in direct application. The largest tonnage used in any single State was 42,270 tons in California. This was 26.0% of the total direct-application nitrogen used in the State. The next 4 States, in which anhydrous ammonia was used in decreasing quantities, were Mississippi, Texas, Louisiana, and Nebraska.

The largest proportion of direct-application nitrogen applied in the individual States as anhydrous ammonia was in New Mexico, followed in decreasing order by Minnesota, Louisiana, Wisconsin, and Texas (figure 5). The largest tonnages of total direct-application nitrogen in 1955 were used in California, Mississippi, and North Carolina, and 26.0, 34.7, and 10.7% of the respective tonnages were from anhydrous ammonia.

The annual consumption of nitrogen solutions, including aqua ammonia, is given in table 2 by States and regions for the years ended June 30, 1947 through 1955. Fifty percent or more of the annual consumption has



been in the Pacific Region every year except 1953 and 1954 and most of this use has been in California.

The percentage consumption pattern of nitrogen solutions is given in figure 5. The use of these solutions has developed more slowly than anhydrous ammonia use, but they accounted for a greater percentage of the nitrogen applied directly to the soil in Maine, New York, Delaware, District of Columbia, Virginia, and Hawaii in 1954-55 than anhydrous

ammonia. In California, where their use is well established, they account for 22.8% of the total direct-application nitrogen compared to the 26.0% from anhydrous ammonia. Nitrogen solutions were not used in 1954-55 in New Hampshire, Vermont, Massachusetts, Rhode Island, West Virginia, Tennessee, Mississippi, Oklahoma, Montana, Wyoming, and New Mexico.

Previous to World War II, there were only 9 domestic synthetic am-

monia plants, with an estimated annual production capacity of 459,000 tons of ammonia, equivalent to 337,000 tons of nitrogen. These plants were located in California (3), Michigan (2), New York (2), Virginia (1), and West Virginia (1). The demand for fertilizers and explosives engendered by World War II necessitated the expansion of the industry, and the Government built 10 synthetic ammonia plants distributed in 9 States.

Nine of these plants were leased or sold to private industry following the war and the other one, the plant of the Tennessee Valley Authority, is still operated by the Government. The total estimated capacity of these 10 plants plus the expanded capacity of the 9 privately owned plants, was 1,700,000 tons of ammonia or 1,400,000 tons of nitrogen, by the end of the war.

Agricultural need for nitrogen still exceeded the supply and in 1950 a nitrogen expansion program was initiated in an effort to satisfy this shortage and to supply future requirements. Additional construction will have increased the number of synthe-

tic ammonia plants to 46 by the end of 1956. This will raise the estimated annual production capacity of the U.S. to 3,554,000 tons of ammonia (table 3). The locations of these new plants are scattered with at least 1 plant in every continental region except the Mountain Region. The plant locations are shown in figure 5 which also shows the location of those producers manufacturing nitrogen solutions, including aqua ammonia.

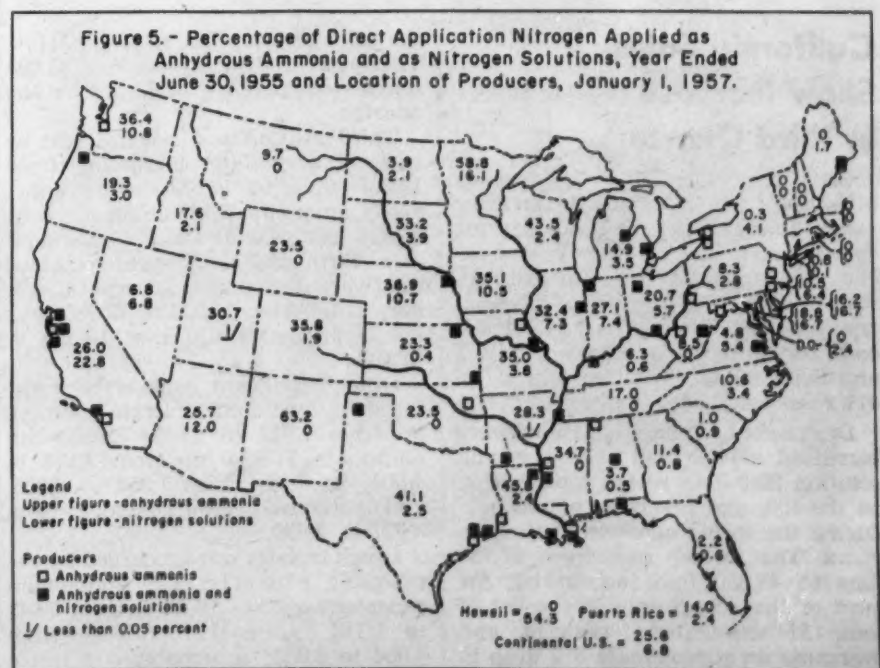
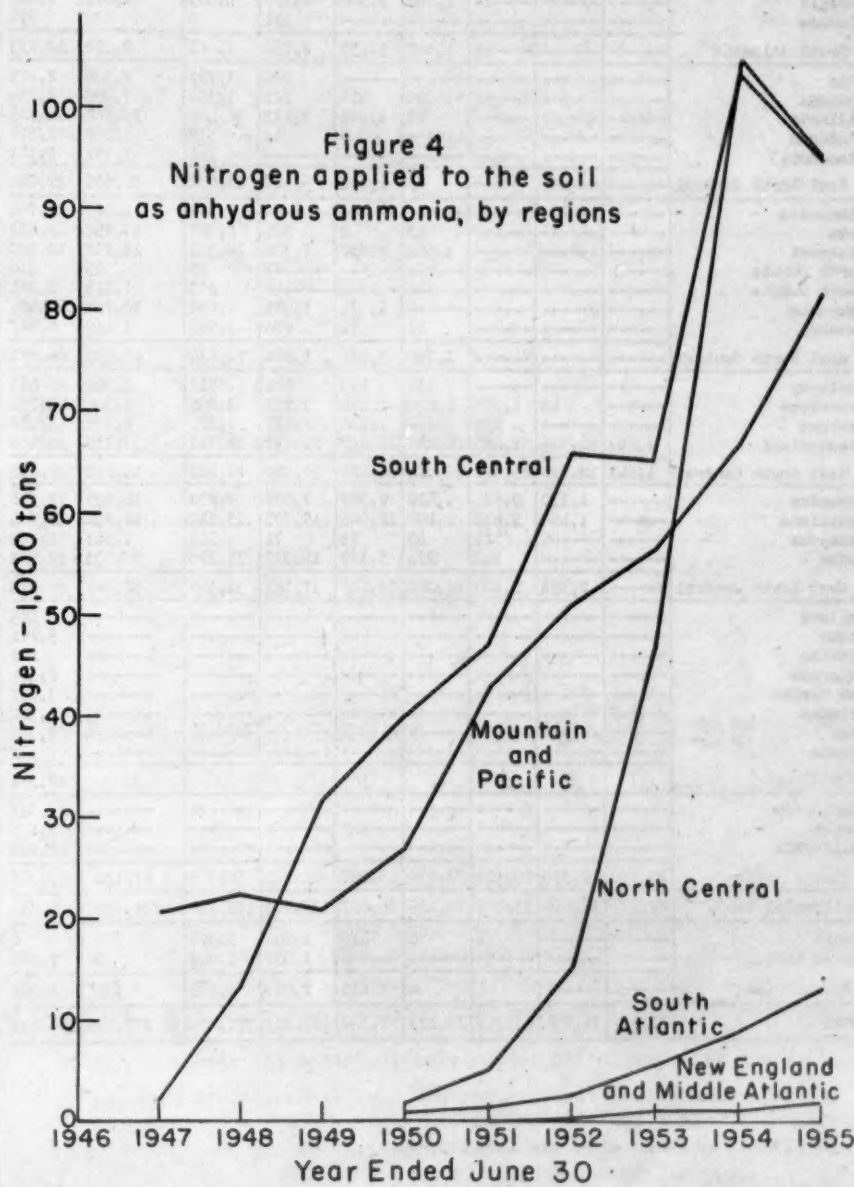
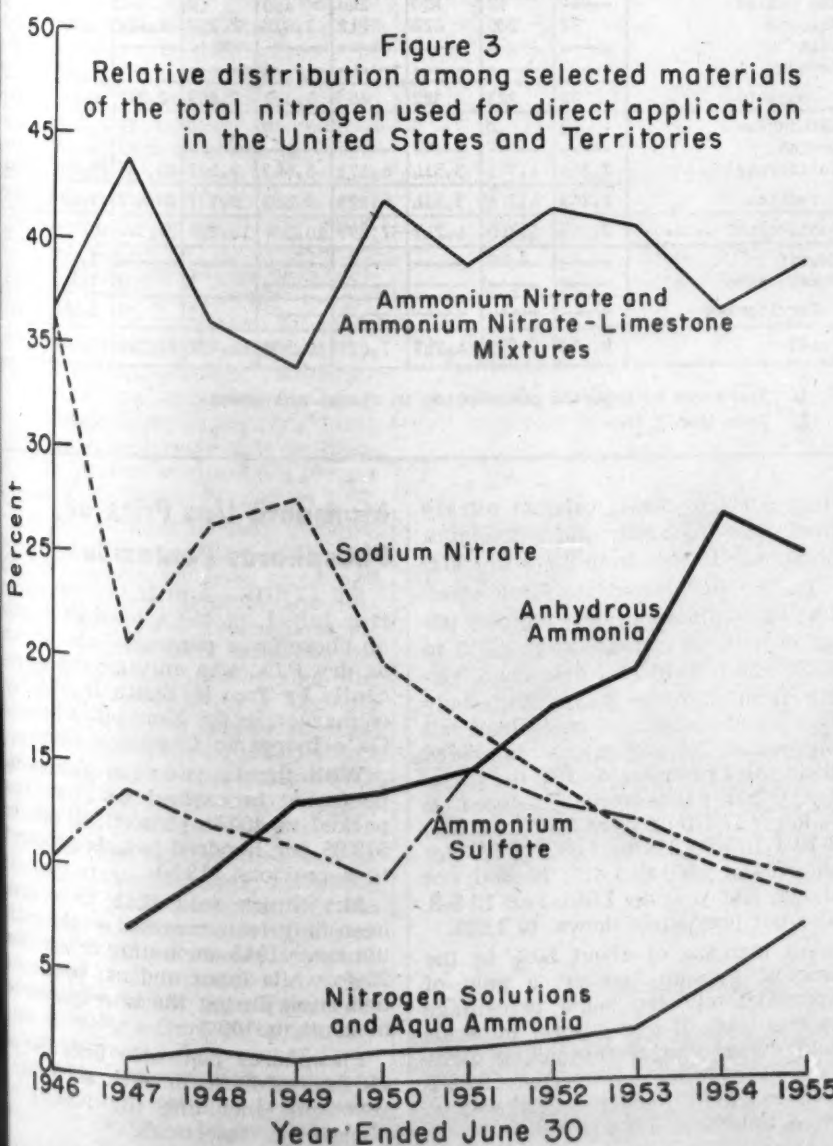
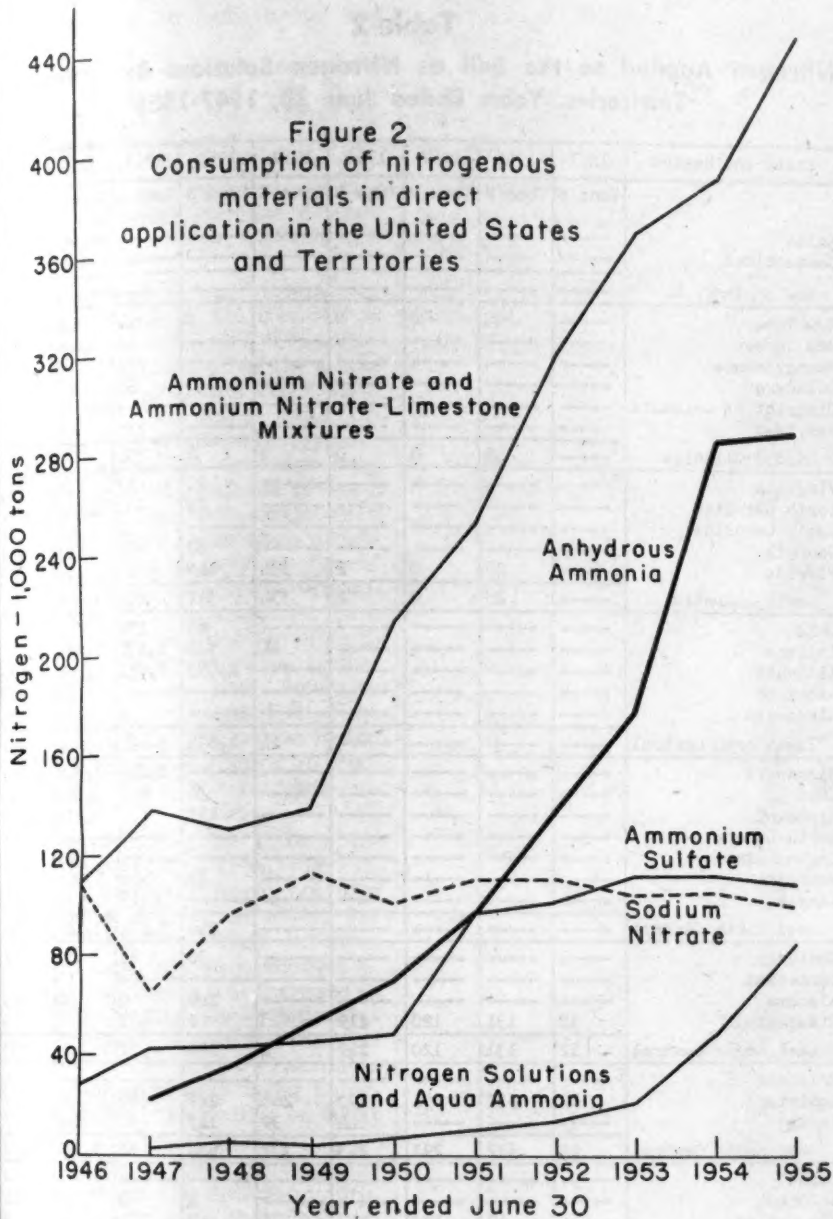
TABLE 3. Location and estimated annual capacity of anhydrous ammonia plants, by regions, January 1, 1957

Region	Plants Number	Estimated Annual Capacity 1,000 Tons
Middle Atlantic <sup>1</sup>	9	584
East North Central	4	538
West North Central	5	354
East South Central <sup>2</sup>	8	773
West South Central	10	941
Pacific	8	344
<b>Total</b>	<b>46</b>	<b>3,554</b>

<sup>1</sup>Includes 1 plant in New England.  
<sup>2</sup>Includes 2 plants in the South Atlantic Region.

Additional plants, including one in the Mountain Region, are under way, and upon completion the domestic synthetic ammonia production capacity will be about 3,917,000 tons.

Another potential source of direct-application ammonia is the 16,621





tons produced in 1955 by the by-product coke-oven plants in the form of aqua ammonia. This material would have a limited market because of its low analysis but it could be used to supplement the other direct-application materials.

Summarizing, it should be remembered that the fertilizer nitrogen used in the fiscal year ended June 30, 1955, in the United States and

Territories, was almost triple the quantity used in the fiscal year 1946. Almost 60% was in the form of separate materials in 1955 compared to about 40% in 1946. Ammonium nitrate has consistently supplied more direct-application nitrogen since 1946 than any other individual material.

Anhydrous ammonia became the second largest source in 1952, apply-

ing 137,983 tons of nitrogen, and its use has continued to increase. Direct-application ammonia was being used by 1955 in every State in the United States except Maine, New Hampshire, Vermont, Massachusetts, and Rhode Island. Nitrogen solutions, including aqua ammonia, also have risen to prominence in the last few years and were being applied directly to the soil in all but 11 States in 1955.

The increased use of anhydrous am-

monia and other liquid sources of nitrogen has been possible because of the expansion of the ammonia industry. Previous to World War II, there were only 9 domestic synthetic ammonia plants with an estimated annual production capacity of 377,000 tons of nitrogen. This capacity will have been increased to 3,554,000 tons by the end of 1956. There will be 46 plants with at least 1 in each continental area except the Mountain Region.

**Table 1**  
**Nitrogen Applied to the Soil as Anhydrous Ammonia By States and Territories, Years Ended June 30, 1947-1955<sup>1</sup>**

State and Region	1947	1948	1949	1950	1951	1952	1953	1954	1955
Connecticut							5	2	11
New England							5	2	11
New York							1	170	21
New Jersey					21	126	448	263	319
Pennsylvania							293	142	505
Delaware						22	174	179	195
Maryland					7	167	140	371	524
West Virginia								3	69
Middle Atlantic					28	315	1,056	1,128	1,633
Virginia					113	43	383	270	660
North Carolina						360	1,159	2,930	6,092
South Carolina							117	408	453
Georgia				1,002	1,360	2,196	4,005	4,072	5,549
Florida						151	0	572	371
South Atlantic				1,002	1,473	2,750	5,664	9,052	13,133
Ohio						895	1,789	2,308	2,479
Indiana				20	168	521	1,350	7,090	8,734
Illinois				43	1,065	3,973	16,408	23,508	14,215
Michigan					8	12	519	1,178	1,305
Wisconsin							558	1,597	2,311
East North Central				63	1,241	5,401	20,632	35,835	29,044
Minnesota							599	4,523	12,704
Iowa				43	0	505	4,097	17,252	14,681
Missouri				1,662	2,832	7,336	10,311	18,219	12,297
North Dakota							19	25	110
South Dakota							213	1,113	1,391
Nebraska					1,071	1,495	7,631	20,741	18,691
Kansas				41	21	676	3,564	7,419	6,997
West North Central				1,746	3,924	9,982	26,434	69,592	66,871
Kentucky					139	293	674	517	1,080
Tennessee			43	1,037	2,800	1,478	3,211	2,802	5,306
Alabama			192	618	1,138	2,487	1,670	2,137	3,754
Mississippi	1,647	10,555	22,495	24,467	21,517	22,737	22,198	37,215	33,506
East South Central	1,647	10,555	22,495	24,467	21,517	22,737	22,198	37,215	33,506
Arkansas		1,130	3,524	5,420	7,309	7,075	9,279	16,839	12,336
Louisiana		1,450	5,415	6,409	12,024	15,703	13,140	18,916	19,504
Oklahoma			21	43	23	71	560	1,410	1,473
Texas			140	214	3,192	14,312	15,190	20,633	22,297
West South Central		2,588	9,100	12,366	22,548	37,161	38,169	58,022	55,610
Montana									185
Idaho									3,251
Wyoming									169
Colorado									2,164
New Mexico									3,737
Arizona									8,162
Utah									1,375
Nevada									8
Mountain <sup>2/</sup>	3/	3/	3/	3/	3/	3/	3/	3/	19,351
Washington									15,315
Oregon									5,800
California									42,270
Pacific <sup>3/</sup>	20,550	22,370	20,961	27,176	43,057	51,245	56,788	67,120	63,085
Continental U. S.	22,397	35,556	53,765	70,117	96,697	135,903	175,935	236,575	288,239
Hawaii			4	6	410	1,046	1,097	500	0
Puerto Rico						1,032	1,042	0	2,098
Territories			4	6	410	2,080	2,139	500	2,098
Total	22,397	35,556	53,772	70,123	97,107	137,983	178,074	237,155	290,337

<sup>1/</sup> There was no reported consumption in States not shown.

<sup>2/</sup> Individual State data are not given previous to 1955 to avoid divulging private business.

<sup>3/</sup> Total included with the Pacific total.

<sup>4/</sup> Revised.

## California Sales Show Increase in Third Quarter

SAN FRANCISCO — California's off-season for commercial fertilizer sales showed a gain of about 5% for the summer quarter this year over the corresponding three-month period in 1955. The Bureau of Chemistry reported sales totaling 181,386 tons for the period between July 1 and Sept. 30 as compared with 173,411 tons last year.

Dry mixed commercial fertilizers increased a slim lead over ammonia solution 20-0-0 to retain top position on the list, and reversing places held during the spring quarters of the two years. The former rose from 37,787 tons to 43,350 tons, accounting for most of the actual gain in the list of some 31 segregated fertilizers, and overcame an approximate 8% drop in

the sales of ammonia solution 20-0-0. The latter registered sales of 33,095 tons as compared with 36,229 for the quarter.

Third position was held this year by ammonium sulfate, increasing from 14,330 tons to 17,831, while anhydrous ammonia held almost even at 15,833 last year and 15,890 this summer. Fifth and sixth spots remained relatively unchanged: superphosphate normal up from 11,924 to 12,945; and liquid fertilizers up from 10,599 to 11,198.

Other significant gains were registered by ammonium nitrate solution, up from 1,942 to 4,845; ammonium phosphate 11-48-0 up from 3,174 to 4,504; urea, up from 1,354 to 2,305, and activated sewage sludge from 3,077 to 3,939.

Drops in sales were recorded by the following chemicals: Ammonium phosphate-sulfate 16-20-0, from 9,841 to 9,184; ammonium nitrate from 8,054 to 6,063; superphosphate treble

**Table 2**  
**Nitrogen Applied to the Soil as Nitrogen Solutions By States and Territories, Years Ended June 30, 1947-1955<sup>1</sup>**

State and Region	1947	1948	1949	1950	1951	1952	1953	1954	1955
Maine									10
Connecticut									1
New England									11
New York		48	0	0	0	0	24	136	311
New Jersey							42	108	194
Pennsylvania							22	60	172
Delaware						6	33	309	231
District of Columbia									1
Maryland							135	106	517
Middle Atlantic		48	0	0	0	8	256	799	1,396
Virginia						20	93	15	744
North Carolina						70	300	1,047	1,960
South Carolina							41	107	401
Georgia						87	24	43	404
Florida		28	0	2	354	140	40	114	97
South Atlantic		28	0	2	354	317	498	1,326	3,606
Ohio						64	232	747	681
Indiana					14	518	1,369	1,930	2,394
Illinois						1,053	2,061	1,798	3,190
Michigan								101	308
Wisconsin							1	104	129
East North Central					14	1,635	3,663	4,680	6,702
Minnesota							1,044	1,752	3,467
Iowa						36	804	3,354	4,389
Missouri						197	573	1,320	1,380
North Dakota								70	58
South Dakota								70	162
Nebraska						23	565	5,566	5,444
Kansas							295	94	134
West North Central						256	3,278	13,126	14,944
Kentucky						36	27	187	62
Tennessee								13	6
Alabama						140	0	0	268
Mississippi	12	131	120	219	0	0	0	0	3
East South Central	12	131	120	219	0	176	27	200	33
Arkansas									6
Louisiana	62	572	291	199	268	287	360	496	1,324
Texas				44	39	147	453	795	1,335
West South Central	62	572	291	243	307	434	818	1,291	2,370
Idaho									28
Colorado						4	0	35	11
New Mexico			100	148	153	0	161	0	0
Arizona	52	205	222	712	1,018	2,259	2,124	4,046	3,797
Utah								3	2/
Nevada								51	3
Mountain	52	223	322	863	1,171	2,263	2,293	4,135	4,300
Washington	3	0	0	0	0	0	19	783	4,455
Oregon							23	53	39
California	2,764	4,781	3,514	6,173	8,663	9,137	10,445	20,590	37,144
Pacific	2,767	4,781	3,514	6,173	8,663	9,137	10,487	21,126	42,448
Continental U. S.	2,893	5,783	4,247	7,497	10,509	14,276	21,320	46,983	76,144
Hawaii								3,023	8,488
Puerto Rico							3	0	1,398
Territories							3	0	4,421
Total	2,893	5,783	4,247	7,497	10,509	14,279	21,320	51,404	84,971

<sup>1/</sup> There was no reported consumption in States not shown.

<sup>2/</sup> Less than 1 ton.

from 6,063 to 3,964; calcium nitrate from 3,392 to 2,869; and ammonium phosphate 13-39-0 from 2,713 to 1,771.

In the dry mixed fertilizer class, 10-10-5 continued to hold topmost position with an increase from 4,615 to 6,687 and 10-10-10 was second, rising from 3,026 to 4,492. With only two or three minor exceptions, all segregated classifications improved their sales positions during the quarter. Other gains were registered as follows: 17-7-0 up from 1,857 to 3,707; 6-10-4 from 1,253 to 1,682; 4-4-2 not shown last year to 1,615; 16-20-0, not shown last year to 1,065, and 15-8-8, also not previously shown, to 1,045.

An increase of about 50% in the sale of gypsum brought a gain of approximately the same percentage in the total of agricultural minerals sold during the corresponding quarters. The former rose from 87,285 tons to 128,979, and the total was up from 109,892 to 151,654.

## Monsanto Ups Price of Phosphorus Pentoxide

ST. LOUIS—A price increase effective Jan. 1, of 45¢ a hundred pounds on phosphorus pentoxide, also known as dry P<sub>2</sub>O<sub>5</sub>, was announced here recently by Tom K. Smith Jr., director of marketing for Monsanto Chemical Co.'s Inorganic Chemicals Division.

With the increase, phosphorus pentoxide in carload quantities packed in 400-lb. drums will sell for \$13.95 per hundred pounds compared to a previous \$13.50.

Mr. Smith said that there have been only two increases on the product since 1945 amounting to less than 25%, while labor and material costs had risen during the same period more than 100%.

Phosphorus pentoxide finds use as an intermediate for various chemical reactions, including the making of phosphorus insecticides.



## Farm Income From Livestock, Crops Up; Trend May Continue

WASHINGTON—Farm income has turned up this year, following four consecutive years of decline, and present prospects are for some further increases in 1957, say U.S. Department of Agriculture officials.

A 2% increase in cash receipts from marketings so far this year reflects increases for both crops and livestock.

Farmers' realized net income in the first nine months of 1956 is up 4% over 1955, and some further increase is expected next year. Payments under the new Soil Bank programs are an important contributing factor to this year's increase, as they will be again next year," USDA officials state.

Farmers' realized net income was at an annual rate of \$11.7 billion in the first three quarters of 1956, compared with \$11.3 billion for the whole year 1955. Cash receipts from farm marketings totaled \$23.9 billion through October of this year, up more than 2% from the corresponding months of 1955. The volume of farm marketings is about 3% larger than last year's volume, more than offsetting slightly lower average prices. Farmers' non-money income, including the value of home-consumed farm products and the rental value of farm dwellings, is about the same as last year. However, the new incentive payments for wool, started in July, and payments for participation in the Soil Bank of 1956, beginning in September, are adding to farmers' income this year.

Farmers' realized gross income, including cash receipts from marketings and government payments plus non-money income, is up about 2% so far this year. Production expenses have also risen, but only about 1%. The result has been a 4% increase in realized net income. These estimates refer to the average rate for the first three quarters of the year. Estimates for the whole year may differ somewhat from these, depending on what happens in the fourth quarter.

Allowing for expected crop acreage reductions under the Soil Bank programs, it seems likely that cash receipts from marketings of farm crops will be smaller in 1957. Prices of farm crops may average slightly higher next year, but the volume of crop marketings will probably be reduced more than enough to offset the prospective increase in average prices. But with somewhat higher receipts from livestock and livestock products, the decline in total cash receipts from all marketings is expected to be fairly small. This decline, however, will be more than offset by increases in Soil Bank payments. Because of reduced acreage, production expenses in total are likely to show little change from this year's level, even though unit costs will be higher. Thus, farmers' realized net income appears likely to rise further in 1957.

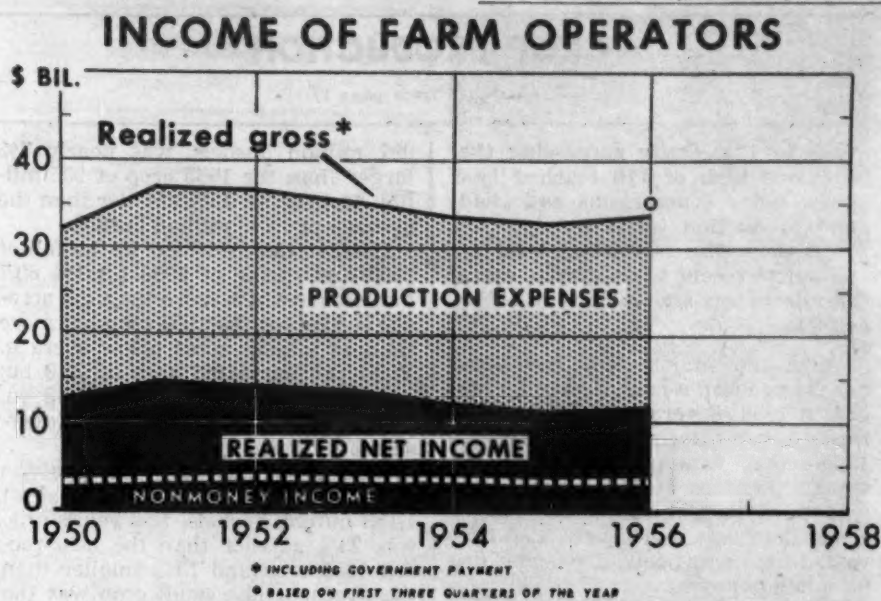
The 2% increase in cash receipts from marketings so far this year reflects increases for both crops and livestock. Prices of livestock and livestock products have averaged about 1% lower than in 1955. However, the volume of livestock marketings was 3% larger, so that cash receipts from livestock and products total about 2% above last year. Marketings of crops at average prices of crops are both slightly up, and total crop receipts are also a little above last year.

Receipts from turkeys are also substantially above last year, reflecting increased sales. The increase in total cash receipts is the result of higher receipts from wheat, soybeans and many of the fruits and vegetables, which more than offset declines in receipts from cotton, tobacco and some feed crops.

The reductions expected next year in farmers' cash receipts from marketings are likely to be concentrated

in the basic crops, especially wheat, cotton, and corn, which acreage will likely be curtailed under the acreage reserve program. But these reduced receipts from crops may well be offset by Soil Bank payments. Cash receipts from livestock and livestock products may show some increase.

Total farm production expenses are up this year, with increases in interest, taxes, and depreciation, larger purchases of feeder livestock, and higher costs of operating and repairing motor vehicles, machinery and buildings. Prices paid by farmers for some industrial commodities are expected to be higher next year. Further, interest and tax payments, farm wage rates, and depreciation charges will likely be higher than this year. However, the Soil Bank will reduce



acres used, with some reduction in the quantity of items purchased by farmers. On balance, total pro-

duction expenses in 1957 may not be much different from the 1956 total, USDA officials anticipate.

# SPM

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## CROP PRODUCTION

(Continued from page 1)

rose to 123, easily surpassing the previous high of 119 reached last year. Index comparisons and yield and production totals for 1939 to 1956 show the increasing level of output in recent years despite acreage decreases and varying weather effects.

Only one major field crop—soybeans—reached a new production record in 1956. Several important crops made larger total production than in 1955—corn, winter wheat, spring wheat, potatoes and flaxseed, which was third largest of record. Larger crops than last year's were also harvested for sugar beets, dry beans, dry peas and popcorn.

Crops which fell below last year in outturn included cotton, hay, oats, barley, all sorghums, rice, tobacco, peanuts, sugarcane, sweetpotatoes, cowpeas, most legume and grass seeds and broomcorn.

Citrus fruit crops as a group were slightly larger and deciduous fruit crops slightly smaller. Vegetable crops for fresh market were slightly larger and for commercial processing were considerably larger than in 1955.

**New high yield per acre records** were set in 1956 by corn, spring wheat, barley, potatoes and tobacco. Sugar beets tied the 1955 yield record and rice fell only slightly below. Yields for cotton, soybeans, winter wheat, sorghum grain, dry beans, peanuts and popcorn were at above average to near-record levels.

Only a few field crops, including flaxseed, sorghum forage and silage, failed to exceed 10-year average yields. Abandonment of lower yielding acreage of many crops had an important influence in raising the yield average for the acreage actually harvested.

Harvested acreage of 59 crops declined in 1956 to 319 million acres, smallest since the drouth disaster year of 1936 and nearly 14 million acres below last year's total. Principal decreases since last year in millions of acres were: oats, 5.6; corn, 3.6; sorghum grain, 3.5, and barley, 1.7, making the sizable reduction of 14.4 million acres in feed grains. All hay acreage was down 1.7 million acres; cotton, 1.3; rye, 0.4; peanuts, 0.3; rice, 0.3, and tobacco, 0.1.

Fewer crops increased in harvested acreage including soybeans, 2.3 million acres; winter wheat, 1.9; spring wheat, 0.6, and flaxseed, 0.6. The Soil Bank Act, although too late to forestall many plantings, enlisted about 12 million acres of land with consequent diversion from crop harvest of much of this acreage.

The total acreage of crops planted or grown in 1956 was about 346 million acres. This was about 8 million acres or 2% less than in 1955 and the smallest planted in any year since 1939, the year World War II erupted in Europe. Acreage allotments for wheat, cotton, corn, rice and tobacco were largely responsible for sizable reductions in plantings of these crops while weather and other factors resulted in decreased plantings of oats, barley, sorghums and dry beans.

The production of all corn in 1956, at 3,451 million bushels, is 7% above the 1955 crop and is exceeded only by the record crop of 3,605 million bushels in 1948. While acreage has declined during the past decade, yields have moved upward.

The current yield of all corn at 45.4 bu. per harvested acre is far above the 40.6 bu. in 1955 and well exceeds the previous record of 42.5 bu. in 1948.

The acreage of corn planted for all purposes totaled nearly 78.6 million acres, down 3% from 81.1 million acres in 1955 and 7% below average.

Production of all wheat in 1956, at

997 million bushels, was nearly 7% larger than the 1955 crop of 935 million bushels but 13% smaller than the average of 1,148 million bushels.

Land seeded to wheat in the fall of 1955 and spring of 1956 totaled 60.7 million acres, 4% more than the acreage seeded for the 1955 crop but more than 14 million acres below average. Yield per harvested acre at 20.0 bu. exceeded the record high of 19.8 bu. in 1955 and was well above the average of 17.1 bu.

Oats production in 1956 was the smallest in 12 years. Estimated at 1,153 million bushels, this year's crop was 23% smaller than the near-record 1955 crop and 13% smaller than the average. The small crop was the result of a sharp reduction in acreage harvested for grain which, at only 33.6 million acres, was the lowest in 17 years. In addition to the usual diversion of seeded acreage to hay, pasture and other uses, more oats than any other crop were plowed up or destroyed in connection with the 1956 soil bank program.

The U.S. yield of 34.3 bu. per acre compares with last year's near-record of 38.3 bu. and the average of 34.1 bu.

The 1956 acreage seeded to oats for all purposes is estimated at 44.6 million acres, 2.9 million less than last year's record, but slightly above average.

Production of barley in 1956 is estimated at 372 million bushels, 7% smaller than the large crop in 1955, but about one-third larger than the 10-year average. The decline from last year is attributed to a sharp reduction in the acreage harvested, which was partly offset by higher yields. The U.S. yield per acre at 29.0 bu. was 1.5 bu. above last year and the highest of record.

Production of rye in 1956 is estimated at 21,558,000 bu., 26% below the 1955 crop but the same as the 10-year average. The 1,636,000 acres harvested this year were about 20% smaller than last year and 5% below average. The 1956 yield of 13.2 bu. per acre was 1.0 bu. lower than 1955 but 0.7 bu. above average. An estimated 4.6 million acres were seeded to rye for the 1956 crop compared with 5.1 million acres seeded for the 1955 crop.

Rice was harvested from an estimated 1,597,500 acres, 14% less than last year, 16% less than the 10-year average and 39% less than the record high acreage harvested in 1954. Acreage put into the acreage reserve program contributed to the abandonment but the largest acreage loss was in Texas where water shortages due to extreme drouth conditions and the intrusion of salt water contributed to the loss.

The acreage harvested in each state was less than in 1955. However, the reduced acreage was partially offset by record or near record yields per acre. California and Missouri report record yields with the California yield 625 lb. above the previous record produced in 1952. Arkansas, Louisiana and Texas yields were second only to last year's records. The Mississippi yield was the same as last year's record.

With harvesting virtually completed except in western irrigated areas, a 1956 cotton crop of 13,303,000 bales was estimated as of Dec. 1. This is 150,000 bales, or about 1% more than the Nov. 1 forecast and compares with the 1955 crop of 14,721,000 bales and the 10-year average of 13,098,000 bales.

The U.S. yield per acre, at 408 lb., is second to last year's high of 417 lb. and 125 lb. above average.

Based on preliminary reports on acreage measurements and soil bank participation, and abandonment in-

formation reported by farmers, the 1956 harvested acreage of cotton is estimated at 15,651,000 acres. This compares with 16,928,000 acres in 1955 and the 10-year average of 22,060,000 acres.

The 1956 production of all hay totaled 108.7 million tons. This was 4 million tons less than last year's record output, but 5.1 million tons more than average. The current crop is the third largest ever harvested.

Yields of all hay averaged 1.48 tons per acre in 1956, slightly below last year's yield of 1.50 tons but well above the 1945-54 average of 1.39 tons.

Alfalfa and alfalfa mixtures reached a new peak in importance this year with increases in acreage, tonnage and percentages of the total hay crop. Production of 61.1 million tons from the 29.4 million acres harvested resulted in a national per acre yield of 2.08 tons—the same as last year. Acreage was 3% above the 1955 previous record.

A smaller acreage of sorghums was planted in 1956. While the total of 21.5 million acres was 10% smaller than the record acreage planted in 1955 it was larger than any other year of record.

Dry bean production in 1956 at 17,114,000 bags (100 lb. clean basis) was about 3% larger than the 1955 crop of 16,649,000 bags and was 6% larger than the average of 16,103,000 bags. Indicated yield of 1,215 lb. (clean basis) per harvested acre was a record high, exceeding the previous record yield of 1,196 lb. in 1953.

The 1955 dry pea production (excluding Austrian peas) is estimated at 4,652,000 bags (100 lb., cleaned basis). This is 84% larger than the very small crop of last year and 20% larger than the 10-year average production. The 361,000 acres planted to dry peas this year was 48,000 acres above 1955 but the largest increase was in harvested acres since there was less abandonment than last year. The harvested acres are estimated at 342,000 compared with 281,000 acres last year.

Soybean production in 1956 reached another all-time high. The crop is estimated at 456 million bushels, 22% above the previous record of 374 million bushels produced in 1955. The yield is the second highest of record, 21.8 bu. per acre compared with 20.1 bu. last year and the record yield of 22.3 bu. in 1949. The 10-year average yield is 20.0 bu. per acre.

Production of peanuts picked and threshed is estimated at 1,567 million pounds, about 1% less than the 1,576 million harvested in 1955, and 13% below average production. The estimate increased 5% from November 1 as harvested yields were turning out better in the Virginia-Carolina area than expected earlier. Final yields in Georgia and Alabama are also higher than estimated as of Nov. 1. Production in Oklahoma, in the Southwest area, is also up from November although still much below 1955.

The acreage picked and threshed in 1956 is estimated at 1,306,000 acres, down about 7.5% from the August estimate. Most of this decrease occurred in Oklahoma and Texas where drouth conditions prevailed throughout the growing season and caused much of the acreage intended for picking and threshing to be used for hay or diverted to other purposes. The 1,396,000 acres harvested in 1956 is 17% below last year and 42% below the average harvested for 1956 through 1954.

Combined production of all types of tobacco is estimated at 2,145 million pounds—2.2% below last year but 0.8% above the average. With all important types under acreage quotas except Pennsylvania Seedleaf and cigar wrapper, this year's crop was harvested from 1,366,000 acres, the smallest since 1941.

As a result of the trend toward the use of improved varieties, heavier application of fertilizer, closer spacing of plants and with

generally good to excellent growing conditions, the all-tobacco yield per acre this season reached a record 1,571 lb., 104 lb. above the previous high established in 1955.

The total 1956 potato production is estimated at 243,238,000 cwt., 7% above last year and average. The total of 1,390,900 acres harvested in 1956 is about 2% less than the acreage harvested in 1955. This small reduction in acreage was more than offset by the record high average yield per acre in 1956. The average yield of 174.9 cwt. per acre is 14.3 cwt. above the 1955 yield and 26.2 cwt. above average.

The 1956 sweetpotato production is placed at 16,922,000 cwt.—19% below the 1955 crop and 16% below average. Most of the reduction in 1956 crop was due to the smaller acreage harvested this year. The 284,700 acres harvested in 1956 were 17% below the 1955 acreage and 25% below average. The yield per acre, at 59.4 cwt., was slightly under the 61.4 cwt. per acre harvested last year but somewhat above the 10-year average yield of 52.8 cwt.

The 1956 crop of sugar beets is estimated at 13,052,000 tons, 7% above last year's production and 17% above the 10-year average of 11,167,000 tons. The 1956 yield per acre at 16.5 tons equals last year's record yield and is 2 tons above average. Loss of acreage was heaviest in Colorado and Michigan.

Total production of fruit and edible nuts for 1956 was unchanged from last year, but 5% above average. Tonnage of the non-citrus fruit crops totaled 1% less than both last year and average. The season brought above average crops of peaches, pears, plums, prunes, dates, nectarines, cranberries, and olives, but the production of apples, sweet cherries, sour cherries, apricots, figs, avocados, and pineapples was below average. Tonnage of grapes was less than in 1955 but equalled the 10-year average.

Production of citrus crops for the 1956-57 season is expected to total 1% greater than last year and 12% above average. Compared with 1955-56, oranges are up 2%; tangerines up 6%; lemons up 8%, and limes about the same, but grapefruit is down 5%.

Aggregate production of nut crops was 7% greater than last year and 11% above average. Large crops of pecans and almonds more than offset a small crop of filberts and a walnut crop only slightly below normal.

Total 1956 commercial production of the 28 principal fresh market vegetables and melons in the important producing states was 216,211,000 cwt.—an increase of 3% over 1955 and 9% above the 1949-54 average.

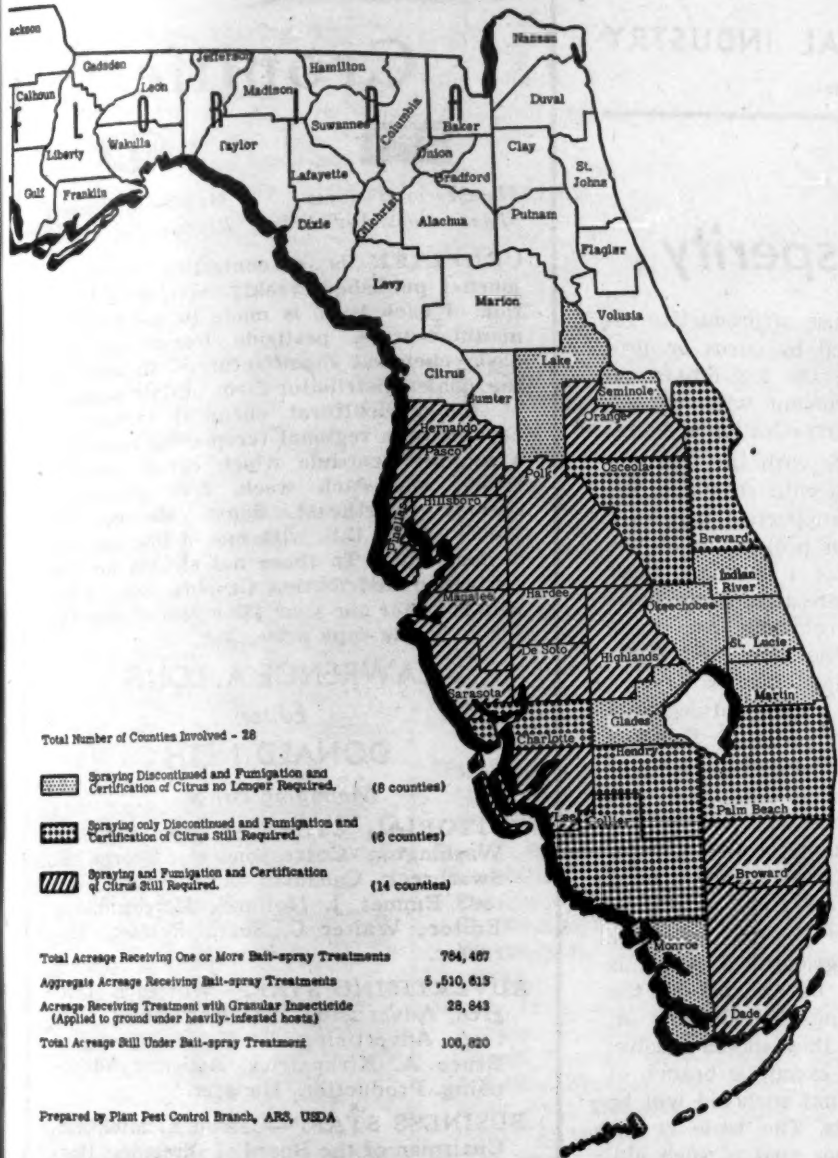
Sharp increases in production over last year were recorded for cabbage, onions, lettuce, carrots, celery, cauliflower and broccoli, and these more than offset significant declines for watermelons, cantaloupes, tomatoes and snap beans.

This year's production in the winter, spring and fall seasons exceeded that for 1955. For these three seasons, higher production of several of the hardy type crops more than offset lower production of some of the more tender vegetables. For summer vegetables and melon crops, good yields were not enough to compensate for reduced acreages and production was slightly less than last year. Strawberry production in 1956 exceeded 1955 by 24%.

The 1956 production of the 10 principal vegetables for commercial processing reached 8.26 million tons exceeding last year's total by over a third from only 6% more harvested acreage. Record large tonnages of tomatoes, sweet corn, green peas, green lima beans and beets for canning were harvested. Amounts of snap beans, pickling cucumbers and spinach were second largest and kraut cabbage third largest ever harvested for commercial processing.



STATUS OF  
MEDITERRANEAN FRUIT FLY  
ERADICATION AND REGULATORY PROGRAM  
DECEMBER 1, 1956



**PRESENT MEDFLY SITUATION**—Above map prepared by the Pest Control Branch of the Agricultural Research Service, USDA, shows the status of Mediterranean Fruit Fly in Florida in December. The heavily-shaded area, (slanting lines) covering 14 counties, represents territory where spraying and fumigation and certification of citrus are still required. In the six counties covered by heavy dots, spraying has been discontinued, but fumigation and certification of citrus are still required. The lightly-shaded eight county area is where spraying has been discontinued and fumigation and certification of citrus are no longer required.

ARS reports that the total number of counties involved in the Medfly area was 28, and that a total of 764,467 acres have received one or more bait-spray treatments. The aggregate acreage receiving these treatments came to 5,510,613, ARS says. Granular insecticides applied to the ground under heavily-infested trees totaled 28,843 acres, and the total acreage remaining under bait-spray treatment for control of the Medfly, is 106,820.

**Inorganic Output in  
October Shows Little  
Change from Year Ago**

WASHINGTON—Production of anhydrous ammonia during October totaled 267,824 short tons, compared with 265,868 short tons in October, 1955, the Bureau of the Census has reported. October output of fertilizer grade ammonium nitrate, original solution, totaled 144,282 short tons, down from 149,723 short tons in October a year earlier.

Production of synthetic ammonium sulfate (technical) in October amounted to 94,622 short tons, compared with 93,069 short tons in October, 1955. Phosphoric acid production totaled 320,709 short tons, about the same as the 320,269 short tons produced in October, 1955.

**SOIL BANK FOLDERS**

FARGO—Two brief folders have been prepared by the North Dakota Agricultural College Extension Service to help farmers make use of the new soil bank program on their farms. Circular SBI discusses "How Will the Soil Bank Fit Your Situation" and Circular SB2 "The Conservation Reserve Program—How It Might Operate in North Dakota."

**Turner Twin Cops  
Another Output Contest**

LITTLEFIELD, TEXAS—Setting new crop records is becoming an ordinary achievement for the two Turner twins, Doyce and Royce. In 1956 Doyce topped a field of 56 contestants in the year's Texas hybrid corn production contest. His yield was 168.2 bu. per acre.

He planted Texas Hybrid 30 in 40-inch rows with a plant spacing of 15 inches in the row. He applied 313 lb. of 16-20-0 fertilizer at planting time and irrigated the plot four times. The corn was planted May 5 and harvested Oct. 14. He is to receive a cash award as top producer in Area 1 and a state champion plaque for irrigation production.

Doyce and his brother, Royce, have been leaders in the Texas irrigation corn production for several years. Royce set a state record last year with 251.5 bu. per acre, and during 1954 Doyce won the distinction of being first Texas producer to break the 200-bu. mark.

Both boys are 4-H club members and have attracted widespread attention not only from other club members, but also from adult farmers throughout Texas for their farming records.

**CIPPERLY**

(Continued from page 1)

—unless it is one that will embarrass Secretary Benson.

On the eve of the convening of the 85th Congress, it seems the best advice to the fertilizer industry is to wait and see what Congress may do. There is no telling which way this "cat" will jump.

The whole matter is centered in the Corn Belt problem. If the present status of the Corn Belt referendum applies, it will mean that many wheat-cotton farmers who have previously signed up for the 1957 acreage reserve program are ineligible under the corn acreage allotment referendum. Thus, they will not be eligible to obtain their acreage allotment payments for the soil bank.

The law says that they must comply with acreage allotments for all acreage allotment crops. However, since the National Farmers Union knocked down the corn soil bank acreage base allotment program, and the result is a 37 million corn acreage allotment, it must be supposed that feed corn farmers will comply for the 1957 crop.

In view of this situation as seen from the capital, about the most constructive act for fertilizer and pesticide dealers is to tell customers to stand still until this next session of Congress makes its move.

There is going to be a change. USDA officials are unwilling to expose their position prior to the opening session of Congress.

The reason is that neither USDA itself nor the White House has been able to measure the effect of any decision on the 1958 congressional elections.

Dealers selling plant food material should remain calm within the next month and advise their farmer-customers not to move too far in any direction until this madly confused situation is clarified.

A demand for plant food will make itself felt in due time, according to informed USDA officials, but the farmer will first have to pinpoint his buying on the basis of objectives which are yet to be disclosed.

**Federal Action Asked  
To Halt Movement  
Of Weed Pests**

SACRAMENTO — The California Association of County Agricultural Commissioners at its annual meeting went on record favoring federal action to keep weed pests out of California.

In its recommendations to this effect, the association's committee on weeds and rodents pointed out that federal legislation would be needed to accomplish this end. Cases were cited of pests and seeds coming into California from Mexico and states adjacent to California. The committee called for expansion of state inspection work to ban contaminated shipments.

R. W. Harper, chief, Bureau of Entomology, California Department of Agriculture, spoke on "Current Fruit Fly Detection and Treatment Programs in California." He said that more than 20,000 fruit fly traps have been in operation in more than 45 California counties on a permanent or seasonal basis during the past year. Since the start of the current fruit fly problems in 1949, he said, state expenditures will have totaled more than \$400,000 by the end of the current fiscal year.

Orval A. Vaughan, supervising state plant quarantine inspector, spoke on "The Clean Grain Program," and A. E. Breech, assistant chief of the state Bureau of Plant Quarantine, discussed "Disposal of Infested Material Coming Through Border Stations."



Dr. Fred V. Grau

**Dr. Fred V. Grau  
Joins Nitroform as  
Chief Agronomist**

WOONSOCKET, R.I. — Appointment of Dr. Fred V. Grau, agronomist, to the staff of Nitroform Agricultural Chemicals, Inc., has been announced by James M. O'Donnell, vice president.

Dr. Grau is known for his contributions to the turfgrass fields during the past quarter century. He has published many technical and popular papers on that subject, and he contributed chapters in the U.S. Department of Agriculture yearbooks for 1948 and 1949.

Dr. Grau, a Nebraska native, was graduated from the University of Nebraska and received his doctor of philosophy degree from the University of Maryland in 1935. He then joined the extension staff at Pennsylvania State College to become the first extension agronomist in the U.S. to specialize in turfgrass work. He was director of the U.S. Golf Assn. Greens Section from 1945 to 1953 and was associated with West Point Products Corp. from 1953 to 1956.

As chief agronomist for Nitroform, Dr. Grau will be available for lectures and demonstrations before groups of golf course superintendents, park, airport, highway and athletic field officials and turfgrass associations.

**Soil Testing Pays,  
Texas Farmers Find**

MIDLAND, TEXAS—Farmers who took advantage of the soil testing service at Texas A&M College and then followed the fertilizer recommendations had handsome profits to show for it.

John King, a local farmer, figured his cropping costs and found that for every dollar spent on fertilizer he got a net return of from \$6.79 to \$13.86.

Soil testing also paid off for Tony Divin of Atascosa County. He applied phosphorus and nitrogen as prescribed by A&M College and reaped a big harvest of peanuts. On 38 acres he produced 99 bu. per acre and on another field got 115 bu. He sold the peanuts for \$3.50 bu. The two soil tests only cost \$2.00.

At Dell City, Texas, Joe Dias made three bales of cotton per acre, which is 50% more than the community average. Mr. Dias had found his soils low in nitrogen and phosphorus and applied superphosphate and anhydrous ammonia.

**IRRIGATION SHORT COURSE**

COLLEGE STATION, TEXAS—Conservation of water in irrigation will be the theme of an irrigation short course to be held Jan. 3-4 at Texas A&M College.



# Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

## AGRICULTURAL EXPERT SAYS . . .

### Farm Legislation Won't Bring Prosperity

Throughout the whole history of class legislation for American farmers, the term "adjustment"—as in the very title of the unconstitutional Agricultural Adjustment Act—has meant an attempt to elevate the farmer's income by price manipulation costly to the individual taxpayer and burdensome to the whole economy. Meantime an entirely different kind of adjustment has been going on, in accordance with inexorable laws of industrial economy. Dr. Karl Brandt, associate director of the Food Research Institute of Stanford University, California, and president of the American Farm Economic Assn., spoke of this in his address at the 1956 annual meeting of the Chamber of Commerce of the U.S. Some of Dr. Brandt's views on the real issues in agriculture are seen in the paragraphs below, taken from his address before the Chamber of Commerce:

"The public probably does not realize how deep is the impact of the technological revolution in agriculture, and how dynamic the changes involved have made our farm system. The number of our farms, which had reached its peak in 1935 with 6.8 million, shrank to 5.4 million in 1950 and to 4.8 million in 1955. In only 20 years 2 million units were deleted and their land absorbed by the others, or at a pace of 100,000 farms per year. But from 1950 to 1955, no less than 600,000 farms ceased to operate. Thus the pace of adjustments has accelerated to the elimination of 120,000 farms per year.

"Drastic adjustments must be made for several transitional years to achieve the disappearance of the surpluses, partly by decreasing production, and partly by increasing sales at home and abroad at lower prices. I do not mention give-away schemes, because it is the hard fact that there is practically no non-competitive demand abroad or at home, no matter how Congress defines the conditions for squeezing in something that shall not upset the market.

"Adjustments are under way. The most prominent among them is the shrinking number of farms, which in the last five years has accelerated to a rate of 120,000 farms per year. This elimination of marginal units has occurred in almost every state in the Union. The remaining units have absorbed the land of the deleted ones; the average size of the unit—149 acres 25 years ago—increased to 215 acres in 1950 and to 242 acres in 1955.

"The one million families on undersized, under-equipped commercial farms form a part of the agricultural problem that defies solution via manipulation of commodity prices. Even a maximum of adjustments in the market and considerably better prices cannot lift the majority of these people to an income that compares favorably with non-agricultural wages. The solution can lie only in the shift of some manpower to other occupations and the enlargement of the operating unit for the remainder.

"Unfortunately, the chief argument for assisting agriculture through high and rigid price supports is the social problem faced by this large number of farm families who, on an average of 1.6 million farms, earn less than \$2,000 a year, half of these earning less than \$1,000 net cash income from all sources. The fact that they contribute only 9% to the market supply of all farm products alone elucidates the economic fallacy of approaching a remedy via farm prices."

Dr. Brandt takes a dim view of the venerated parity concept, which he says "goes back to a golden age when everything was supposedly in balance, although common sense tells us that the whole concept is a nostalgic deception." "The salvation of agriculture," he concludes, "lies in change, decentralized adjustment, and the fullest

intelligent development and use of productive resources. It cannot be pursued by curbs on production, or regimentation by the legislative and executive branches of government with the socialization of losses and the privatization of gains.

"All such devices, together with the free distribution of food, exportation with subsidies, the public pension for land, the support of happiness and prosperity for a certain proportion of the people and the preservation of a fixed and 'just' share in the national income are alien to the basic philosophy of the American economy. And these are all particularly alien to the living and working philosophy of the American farmer. It is a tragic error to believe that one can legislate American agriculture into prosperity. This exceeds the power of even our powerful government.

"All this is just as far removed from the setting of a static society and an economic guild system as it is from a totalitarian society with a centrally managed economy of state capitalism or socialism.

"The real issue in our agricultural policy is not whether farmers should be assisted by the U.S. Government in improving their income or, indeed, how much assistance they should receive. The Congress as well as the executive branch of our government are agreed that such aid will be granted in generous amounts. The issue is the clear recognition of the proper goal of such aid, and the choice of effective means by which to reach it with a minimum of waste, detours, and damage to the system itself.

"The goal for aid to agriculture must be seen in the perspective of the growth and stability of the national economy. Such growth requires manpower in new occupations and industries. The reservoir from which much of it must come is the low-income farms. Agriculture should continue to increase the productivity of labor and adjust its output to the increasing needs of a fast-growing population with a rising level of living. In doing this, agriculture will gradually conquer poverty in the large areas with undersized and undercapitalized farms, and hence underemployed farm people, by making the necessary structural changes. This, however, will take time and patience."

Dr. Brandt thus courageously meets the issue of surplus farm population, which normally is a subject discussed only in politically emotional terms. His are fighting words for those who, at any cost, would preserve the so-called family farm.

### Flying Statistics Reported

Agricultural pilots are building up a lot of mileage for themselves, according to figures quoted in "Planes," official publication of the Aircraft Industries Assn. of America. It says that in 1954, the latest year for which complete statistics are available, that agricultural pilots flew 672,000 hours "to assist the nation's farmers in producing greater crop yields per acre."

The paper continued by reporting that during that flying time, "these pilots treated 36,969,000 acres—an area nearly as large as the states of Texas, Oklahoma, Kansas, Nebraska, South Dakota and North Dakota, combined. They applied 215,859,000 pounds of chemical dusts; 57,699,000 gallons of spray; 143,213,000 pounds of seed; 250,988,000 pounds of fertilizer; and 32,012,000 gallons of spray in defoliation activities. This great aid to the nation's agriculture industry is a typical case in point of the way the aircraft industry contributes to bettering the nation's health, welfare and economy."



## Croplife

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

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# MEETING MEMOS

Jan. 10-11—Nebraska Weed and Insect Control Conference, University of Nebraska, Lincoln, Neb.

Feb. 13-15—Midwestern Chapter, National Shade Tree Conference, Pifional Shade Tree Conference, N. B. Wyter Hotel, Milwaukee; N. B. Wyter Hotel, 536 N. Harlem Ave., River Forest, Ill., secretary-treasurer.

April 2—Western Agricultural Chemicals Assn.; Spring Meeting, Hotel Biltmore, Los Angeles, Cal.; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

**EDITOR'S NOTE**—The listings above are appearing in this column for the first time this week.

1957

Jan. 8-9—Texas Fertilizer Conference, Texas A&M, College Station, Texas.

Jan. 9-10—Eleventh Annual Wisconsin Insect Control Conference, Sponsored by the Entomology Dept., University of Wisconsin, Loraine Hotel, Madison, Wis.

Jan. 10-11—Annual Pesticide School, North Carolina State College Union, Raleigh.

Jan. 10-11—Mississippi Insect Control Conference, third annual meeting, Mississippi State College, State College, Miss.

Jan. 10-12—Northeastern Weed Control Conference, McAlpin Hotel, New York.

Jan. 15-16—Georgia Plant Food Educational Society, Fourth Annual Meeting, University of Georgia, Athens, Ga., Joint Meeting with Georgia Section, American Society of Agronomy.

Jan. 15-16—Nebraska Fertilizer Institute, Inc., College of Agriculture, University of Nebraska, Lincoln. Howard W. Elm, 917 Trust Bldg., Lincoln, Neb., executive secretary.

Jan. 15-17—North Carolina Pest Control Operators' Short Course, College Union, Raleigh, N.C. Clyde F. Smith, head, Dept. of Entomology.

Jan. 16-17—Shell Nematology Workshop, Biltmore Hotel, New York, Max M. Lowish, Shell Chemical Corp., 460 Park Ave., New York 22, N.Y.

Jan. 17—Second Annual Western Oregon Fertilizer Dealers Meeting, Withycombe Hall, Oregon State College, Corvallis, Ore.

Jan. 21-25—Pacific Northwest Vegetable Insect Conference and Northwest Cooperative Spray Project, Imperial Hotel, Portland, Ore.

Jan. 22-24—California Weed Conference, Fresno Memorial Auditorium, Fresno, Cal. Conference headquarters, Hotel Californian.

Jan. 23-24—Fourth Annual Pacific Northwest Agricultural Chemicals Industry Conference, Benson Hotel, Portland, Ore., Sponsored by Western Agricultural Chemicals Assn., C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.

Jan. 23-25—Fertilizer and Lime Salesmen's Conference, Pennsylvania State University, State College, Pa.

Jan. 23-25—Southern Weed Conference, Bon Aire Hotel, Augusta, Ga.; Walter E. Porter, Jr., Agricultural Experiment Station, Louisiana State University, Baton Rouge, La., secretary.

Jan. 24-25—Illinois Custom Spray Operators' School, Illinois Union, University of Illinois campus, H. B. Petty, extension entomologist.

Jan. 25—Colorado Agricultural Chemicals Assn., Annual Meeting, Cos-

mopolitan Hotel, Denver, Frank J. Randall, the C. D. Smith Co., P.O. Box 839, Grand Junction, Colo., Secretary-Treasurer.

Jan. 23-29—National Cotton Council of America, Annual Meeting, St. Louis, Mo.

Jan. 31-Feb. 1-2—Agricultural Aircraft Assn., Annual Convention, Californian Hotel, Fresno, Cal., Wanda Branstetter, Route 3, Box 1077, Sacramento, Executive Secretary.

Feb. 4-6—Cotton States Branch, Entomological Society of America, Birmingham, Ala. W. G. Eden, secretary-treasurer, Alabama Polytechnic Institute, Auburn, Ala.

Feb. 14-15—Middle West Soil Improvement Committee, Edgewater Beach Hotel, Chicago. Zenas H. Beers, 228 N. LaSalle St., Chicago, executive secretary.

Feb. 19-20—Alabama Pest Control Conference and First Annual Meeting of the Alabama Association for the Control of Economic Pests, Auburn, Ala., W. G. Eden, Alabama Polytechnic Institute, Auburn, Ala., secretary-treasurer.

Mar. 4-5—Western Cotton Production Conference for 1957, Westward Ho Hotel, Phoenix, Ariz.

March 6-8—National Agricultural Chemicals Assn., Spring Meeting, Fairmont Hotel, San Francisco, L. S. Hitchner, 1145 19th St. N.W., Washington, D.C., Executive Secretary.

March 11-12—Southwestern Branch, Entomological Society of America, Annual Meeting, Gunter Hotel, San Antonio, Sherman W. Clark, 811 Rusk Ave., Houston 2, Texas, Secretary-Treasurer.

March 27-29—North Central Branch of Entomological Society of America, Annual Meeting, Des Moines, Iowa.

June 9-12—National Plant Food Institute, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 17-19—Fifteenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Dinkler-Tutwiler Hotel, Birmingham, Ala., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 23-26—American Society of Agricultural Engineers, Golden Anniversary meeting, Michigan State University, East Lansing, Mich.

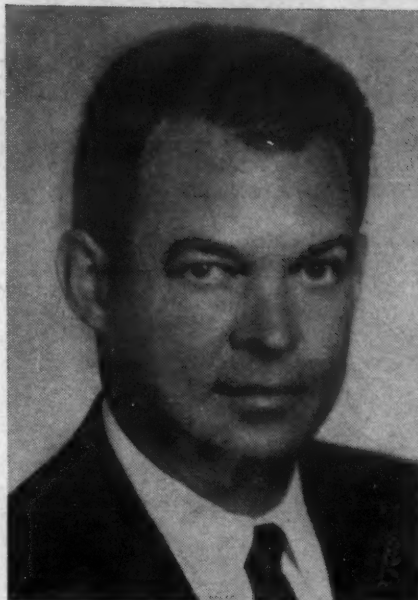
June 26-28—Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. B. R. Bertramson, Washington State College, Pullman, Wash., chairman.

July 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvaz Hotel, Galveston, Texas.

Oct. 2-4—Eleventh annual Beltwide Cotton Mechanization Conference, Shreveport, La.

## ENGINEER TRANSFERRED

AMARILLO, TEXAS—Elmer Hudspeth, agricultural engineer at the Lubbock Experiment Station will be transferred to the Amarillo station Jan. 1, 1957. Mr. Hudspeth has been working on all phases of cotton production, but his most noted achievement has been the development of the press wheel attachment for cotton planters. At the Amarillo Bushland Experiment Station, he will have practically the same job, but will also be working with grass seeding equipment. He will be cooperating with the Soil and Water research branch of the USDA and the Texas Experiment Station.



**JOINS BAG FIRM**—William J. C. Leslie has joined the sales division of Werthan Bag Corp. and will headquarter at the company's general offices, Nashville, Tenn. Mr. Leslie comes to Werthan with a wide background in selling and sales administration. His previous position was as manager of sales and advertising for Godchaux Sugar, Inc., New Orleans, La.

## New Dow Office

CHICAGO—The Dow Chemical Co.'s Chicago sales office has occupied new quarters in a recently completed office center at 6000 W. Touhy in the northwest part of the city, Donald Williams, vice president and director of sales, has announced. The office formerly was at 135 S. LaSalle St. The Chicago office territory includes the northern half of Illinois and Indiana, the southern part of Wisconsin, and Iowa and Nebraska. Manager of the office is Henry S. Pierson. The new quarters consists of 11,000 square feet of a 27,000 square-foot, single story office building. Equipment and floor layout were designed to accommodate a sales staff of up to 80 persons.

## MANAGEMENT COURSE

ST. LOUIS—Monsanto Chemical Co. will establish an advanced management course at Excelsior Springs, Mo., early next year, Francis J. Curtis, vice president for personnel, has announced. William M. Russell, who has been director of sales for Monsanto's organic chemicals division, has been named director of the management course. Horace T. Tubbesing, who has been director of personnel for the company's consumer products division, is assistant director. Both men are located at St. Louis.

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## Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$9 per column inch. All Want Ads cash with order.

## FOR FAST ACTION AND RESULTS

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# Croplife's

## CLASSIFIED ADVERTISING

## Eugene T. Doyle Dies; Was 33 Years With Diamond Black Leaf

BURLINGAME, CAL.—Eugene T. Doyle, 64, western district manager for Diamond Black Leaf Co., died Dec. 20 at his home here. He had been in ill health for some time.

Prominent in agricultural chemical circles on the Pacific Coast, Mr. Doyle was also at one time on the board of directors of the National Agricultural Chemicals Assn. and was a member of long standing in the Western Agricultural Chemicals Assn. He joined the former Tobacco By-Products and Chemical Corp. in 1923 as a sales representative and remained with the firm and its successors until his death.

Funeral services were held at Burlingame Dec. 22, with burial at Burlingame.

## In New Building

SALEM, ORE.—The Oregon State Department of Agriculture is now occupying its own building for the first time during its 25-year history. Remodeling of the agriculture building was completed in recent weeks and an open house for the public was held recently. The department's various laboratories were in operation. These included testing rooms for foods, dairy products, feeds, fertilizers, insecticides, brucellosis, plant pathology and entomology.





# Croplife delivers the **KNOW-NOW!**

**ONLY A WEEKLY NEWSPAPER** can keep the industry up to date on the important policy changes being made in the nation's capital—news that affects market potentials *NOW*, that creates new market opportunities *NOW*.

**ONLY A WEEKLY NEWSPAPER** can keep the industry up to date on infestation outbreaks, crop conditions, farming trends — news of immediate value in planning the week-to-week operations of the industry's business *NOW*.

**ONLY A WEEKLY NEWSPAPER** can keep the industry up to date on the fast-moving plans for expansion of plants, new plant construction, changes in personnel—news of importance to the decision-makers of the industry *NOW*.

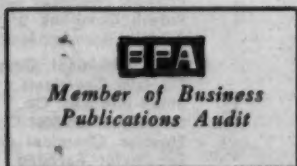
**ONLY A WEEKLY NEWSPAPER** can keep the industry up to date on new developments reported by experiment stations, outlined at association conventions and regional meetings, announced by industry researchers—news of value *NOW*.

and **Croplife** is the **ONLY WEEKLY NEWSPAPER** serving the industry

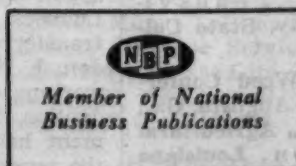
**THAT'S WHY** Croplife is changing the *READING HABITS* of the agricultural chemical industry by giving its readers—the decision-makers of the industry—the know-how, the know-what, the know-when and, most important, the know-NOW. That's why Croplife is *MUST* reading.

**TO ADVERTISERS** interested in the agricultural chemical industry this means, logically, that Croplife is a *MUST* medium for their advertising message. Keep your story up to date—give your customers the news and information about your products they need in the *week-to-week* operation of their business.

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